Comtu Falls Corporation
A Subsidiary of Gravity Renewables, Inc.

Gravity Renewables, Inc.
1401 Walnut St. Suite 420
Boulder, CO 80302
Phone: 303.440.3378
Fax: 720.420.9956
www.gravityrenewables.com

March 19, 2021

Shannon Ames, Executive Director
Low Impact Hydropower Institute
329 Massachusetts Ave, Suite 2
Lexington, MA 02420
sames@lowimpacthydro.org

Re: LIHI Recertification submittal for the Comtu Falls Hydroelectric Project (FERC License P-7888-VT)

Dear Director Ames:

Comtu Falls Corp., a wholly owned subsidiary of Gravity Renewables, Inc., (Gravity) submitted an application for recertification on August 5, 2020. The Stage I Review Transmittal was received in October 2020. Enclosed, please find a revised recertification application that addresses the Stage I Review comments.

If you have any questions or comments regarding the submittals, please feel free to contact me.

Best regards,

Celeste Fay
Regulatory Manager / Project Engineer
Celeste@gravityrenewables.com

Introduction

The Comtu Falls Hydroelectric Project (FERC P-7888) (the Project) is an existing 460 kW hydropower project, which located on the Black River in the City of Springfield, VT. The Project was acquired by Gravity Renewables, Inc. (Gravity) in 2014.

The Project was issued a license from the Federal Energy Regulatory Commission (FERC) in 1986 for construction and operation. A water quality certificate was issued in 1989. Operations are monitored closely to ensure compliant operations are maintained.

LIHI first certified the Project as low impact in 2015 (Certificate #124). There have been no Project changes since the last certification. Based on the information provided herein, Gravity believes that the Project should be considered for Re-certification by the Low Impact Hydropower Institute (LIHI).

Project Location

The Project is located on the Black River in the City of Springfield, VT. The Black River is a tributary of the Connecticut River and is entirely located within the State of Vermont. The Black River flows from Rutland County in its upper reaches, continuing into Windsor County at its confluence with the Connecticut River. Comtu is the third dam on the Black River and is located at river mile 4.2.

The Comtu Dam is the third dam on the Black River; there are two dams downstream and three upstream including a USACE flood control dam.

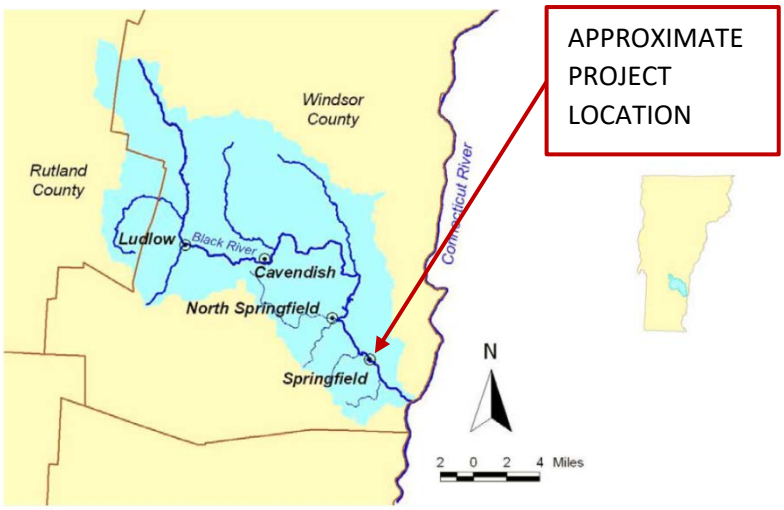

Figure 1. Overview Black River Watershed

The Project is located at mile 4.2 on the Black River. The USACE North Springfield Dam is located upstream of Comtu at River mile 8.3 and provides flood protection for downstream communities along the Black River. There are two dams with operational hydropower located downstream of the Comtu Project including the Lovejoy (RM 4.0) and Slack (RM 4.1) Dams. Upstream of Comtu Falls, the Gilman Dam (RM 4.3) and the Fellows Dam (RM 4.5) have operational hydropower.

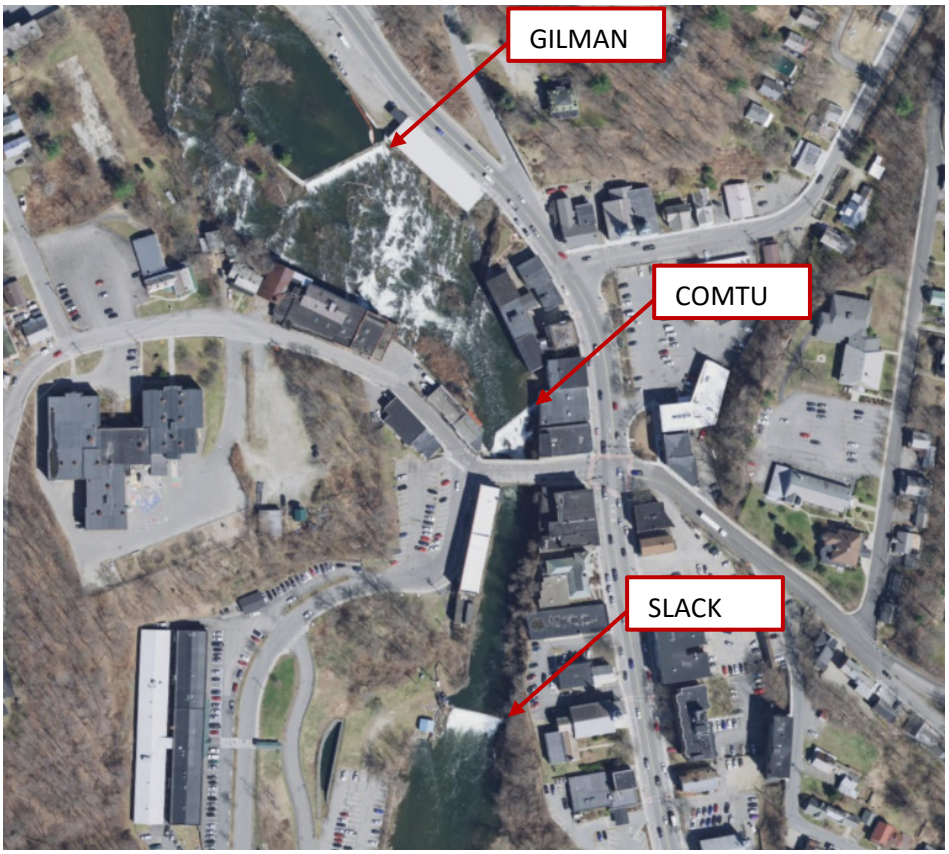

Figure 2. Comtu Project including dams immediately upstream and downstream.

Project Description

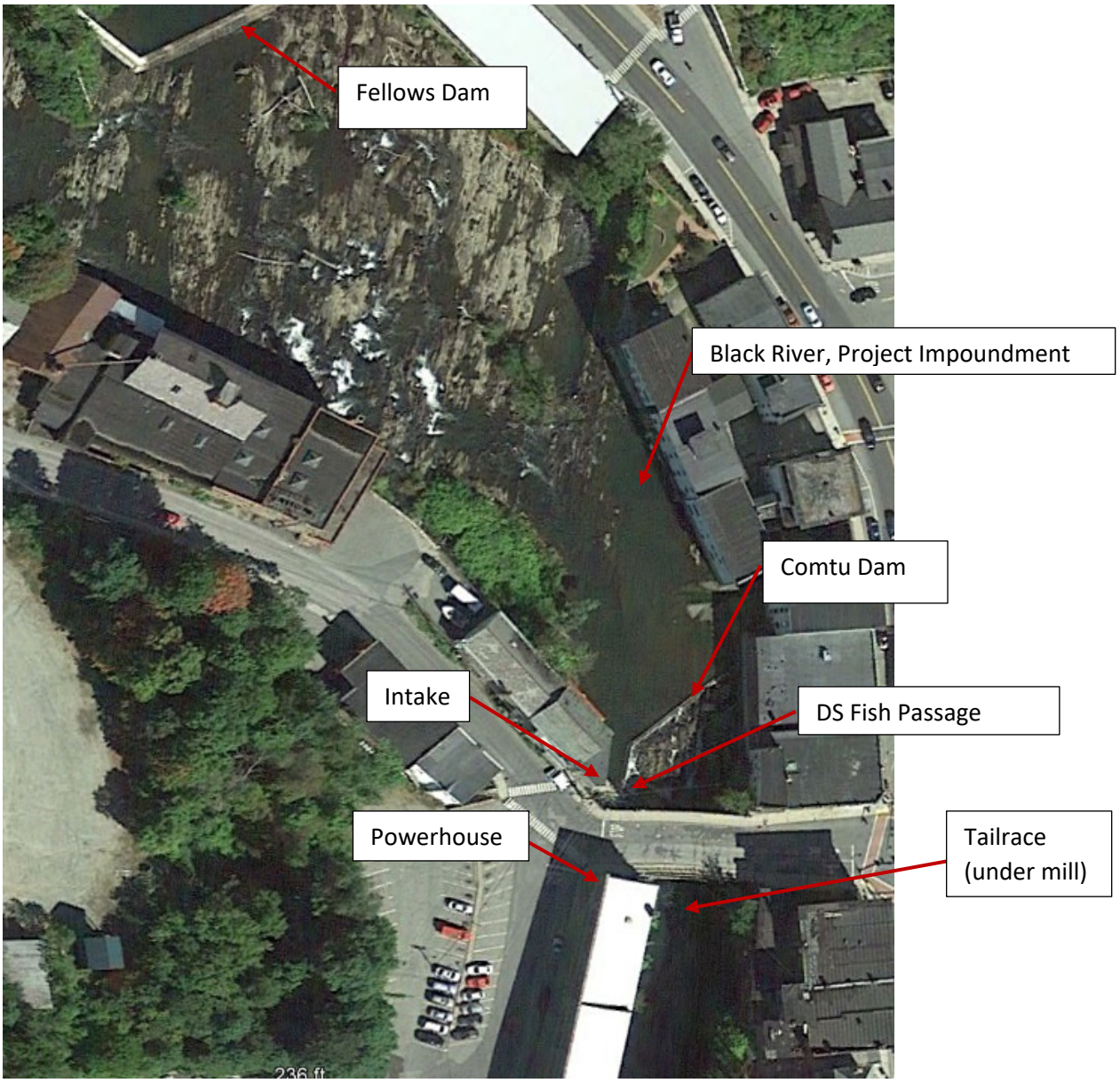

Figure 3. Overview Site Features

The Project consists of a dam, spillway, intake, downstream fish passage facilities, powerhouse and tailrace.

Project works consist of: (a) the 4-foot high, 128-foot long concrete gravity dam with crest elevation of 392 feet mean sea level, tapering from 5.5 feet high at its western side to zero feet high at its eastern side with irregular bedrock comprising the last 17-18 feet, situation on the top of a natural falls; (b) 2-foot high flashboards over 74 feet of the dam; (c) impoundment of 0.4 acres; (d) intake structure at west side of the

dam having 1.5-inch clear bar spacing and set at a 45 degree angle to the intake; (e) six by six foot, 65 foot long reinforced concrete penstock; (f) powerhouse with a turbine; (g) 600-volt induction generator leads; (h) a downstream fish passage facility consisting of a 2.5 foot wide by 2.0 foot high discharge weir at the west abutment of the dam and trashrack, leading to a 3-foot deep plunge pool.

The flashboards consist of steel pins and wooden boards. The boards are designed to fail when there is 3.17 feet of overtopping at the boards. In 2018 FERC requested a review of the design of the flashboards. As a result of this review, no changes to the project resulted. The boards are maintained in place unless they are damaged from debris or the pins bent from overtopping. The boards are repaired or replaced when conditions allow for safe access of personnel. There is no seasonal operation of the flashboards.

In the 1995 the project was ordered by FERC to install downstream passage for Atlantic Salmon smolts which were previously stocked upstream of the project. The downstream passage consists of a notch in the dam which leads to a plunge pool. See Photo 1 for an overview of the downstream fish passage including notch and plunge pool.

Photo 1. Comtu Falls Downstream Fish Passage

In 2012, the program was discontinued and Atlantic salmon smolts are no longer stocked upstream. See excerpt from attached documentation:

> "Due to low adult returns and the science supporting salmon restoration, the U.S. Fish and Wildlife Service decided to discontinue culturing salmon for the restoration in the Connecticut River basin in 2012."

Attached are reference documents discussing the Atlantic Salmon program including a 2015 letter from Vermont Department of Environmental Conservation reiterating that the Federal support for Atlantic salmon restoration has ended and remaining smolts would likely pass through the system by 2016.

Nonetheless, following consultations with resource managers at the time of the project's initial LIHI certification in 2015, the project has continued to voluntarily operate the downstream fish passage for riverine species. There have been no changes in resource management goals for the river and no interruptions to this voluntary measure.

With respect to other area project's fish passages, it appears that no projects on the Black River have upstream passage. It appears that Cavendish, Fellows, Lovejoy, Gillman and Comtu have downstream passage for salmon smolts (that are no longer stocked). It is unclear the status of downstream fish passage at the exempted Slack Dam. We provide the following:

Cavendish October 2019 PAD:

> "There are currently no migratory fish species located within the vicinity of the Project. Anadromous fish species encounter barriers further downstream in the Connecticut River system before they would reach the Black River at Cavendish. Additionally, a 40-year stocking program for Atlantic salmon ceased in 2012 (USFWS 2014). Therefore, no upstream fish passage has been implemented at the Project.
>
> Downstream Fish passage is provided at the project and includes a transition box in the spillway near the intake. Inflow to the box is controlled via a motor operated gate and stop logs to allow for inflows ranging from 10-20 cfs. Fish enter the box and pass down the spillway via an 18-inch-wide chute and then enter into a three-foot-deep plunge pool. "

Fellows & **Lovejoy** Dams January 28, 1999 Letter "Forwards Resources Engineering Group, Inc's as-built plans for downstream fish passage facilities re Fellows Dam Proj-9648, et al."

> "Please find enclosed eight (8) copies of the "As-built" plans for the downstream fish passage facilities at the above named projects [P-9648, P-9649]."

Gilman Dam December 26, 2000 Letter "Multiple Resource Management Inc submits as-built drawings for the downstream fish passage facility completed in mid-October at the Factory Falls Hydroelectric Project-9650."

Hydrology

The Black River is a 40.8 mile-long river in Vermont and a tributary to the Connecticut River. The total drainage area is about 205 square miles located entirely in southeastern Vermont. The Black River begins in a small body of water called Black Pond in Plymouth, Vermont. Winding its way toward the town of Ludlow, the narrow channel receives flow from a variety of small brooks and streams. Passing through Amherst Lake, Echo Lake, Lake Rescue and Lake Pauline, the Black River receives more tributaries and winds through the town of Ludlow, Vermont. The North Branch of the Black River has its headwaters in Reading and joins the main stem in Wethersfield, Vermont at the USACE flood control dam. Built by the USACE between 1957-1960 the dam regulates flood flows to protect the downstream towns of North Springfield and Springfield during high water events. The Black River continues through Springfield, Vermont passing over multiple dams and industrial sites until its final confluence with the Connecticut River at Hoyt's Landing across from New Hampshire's Fort at Number 4 in Charlestown.

The Project has a drainage area of 191 square miles. USGS Gage No. 01153000 at North Springfield Vermont has a drainage area of 158 square miles. The USGS gage has a total period of record of November 1929 to present. Typically, the last 30 years of flow data is utilized for analysis. However, data on the gate is not available from 1989 through 2017. Throughout this application, the period of record utilized was 1969 through 2019, with the exception of the missing data years noted above. Based on the flow data

available between 1969 and 2019 with a drainage area ratio applied, the average annual flow at the project is estimated at 413 cfs.

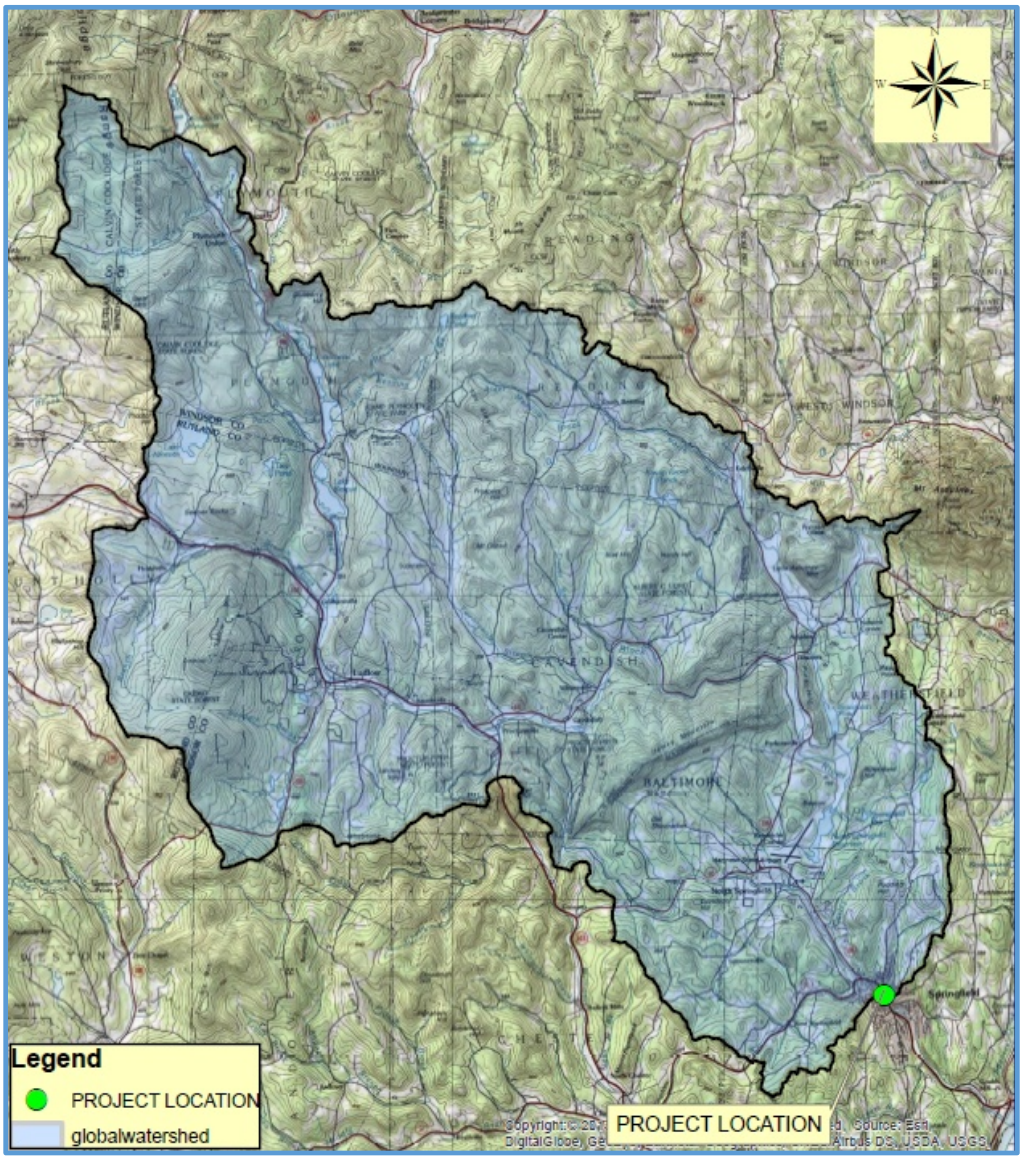

Figure 4. Comtu drainage area map (Adapted from Stream Stats accessed May 21, 2020).

Project Operations

The Project is operated in instantaneous run-of-river mode with no pondage or storage. Turbine flow is controlled by the project's automatic programable logic controller (PLC). A minimum flow release of 0.5 inches of depth (4 cfs) over the flashboards is required over the falls for aesthetics. The project does not have a bypass reach; flow from the draft tube discharges directly to the toe of the waterfall. See Photo 1.

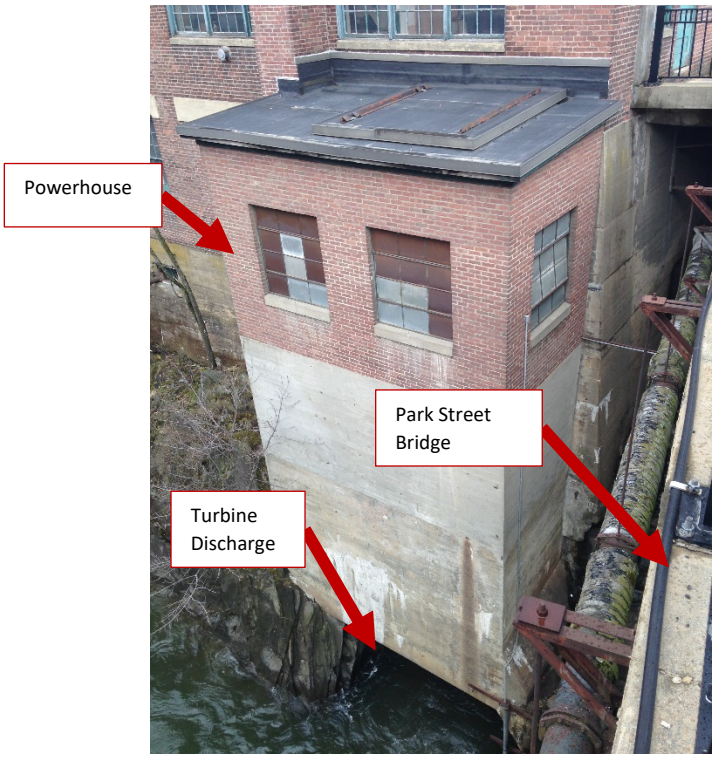

Photo 2. Turbine Discharge Location

Table 1. LIHI B-1 Table Facility Information

Item	***Information Requested***	***Response (include references to further details)***
Name of the Facility	Facility name (use FERC project name or other legal name)	Comtu Falls Hydroelectric Project
Location	River name (USGS proper name)	Black River
	Watershed name (select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html)	Black River Watershed? HUC - 01080106
	Nearest town(s), county(ies), and state(s) to dam	City of Springfield, Windsor County, Vermont
	River mile of dam	Approx. River Mile 4.2
	Geographic latitude of dam	43°17'57.38"
	Geographic longitude of dam	-72°28'57.16"
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Celeste Fay, Manager of Regulatory Affairs, Gravity Renewables, Inc.
	Facility owner company and authorized owner representative name. **For recertifications: If ownership has changed since last certification, provide the date of the change.**	Comtu Falls Corporation Mark Boumansour, manager Ownership same as previous application
	FERC licensee company name (if different from owner)	Comtu Falls Corporation
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	FERC P-7888-VT FERC License Issued in 1986 FERC Amendment 1995 Relicensing Activities (PAD due) in June 2021.
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	FERC License Issued in 1986
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	Water Quality Certificate issued on January 12, 1989 by the State of Vermont

Item	*Information Requested*	*Response (include references to further details)*
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories[1]	See Attachment A for copies of key documents. See Attachment B for key contact information
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Project Commissioned in 1987
	Total installed capacity (MW) **For recertifications: Indicate if installed capacity has changed since last certification**	0.460 MW, has not changed since last certification
	Average annual generation (MWh) and period of record used **For recertifications: Indicate if average annual generation has changed since last certification**	+/- 2,300 MWh, has not changed since last certification
	Mode of operation (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) **For recertifications: Indicate if mode of operation has changed since last certification**	The project operates in Run-of-River Mode and has not changed since last certification.
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	The turbine is a vertical Kaplan unit with a maximum Hydraulic Capacity of 267 cfs and a minimum hydraulic capacity of 40 cfs.
	Trashrack clear spacing (inches), for each trashrack	1.5 inch clear
	Dates and types of major equipment upgrades	None
	Dates, purpose, and type of any recent operational changes	None
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	Intent to relicense at end of license term.

[1] For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land

Item	*Information Requested*	*Response (include references to further details)*
Dam or Diversion	Date of original construction and description and dates of subsequent dam or diversion structure modifications	First dams go back at least to 1774. Existing dam constructed 1902[2] Existing hydropower 1987. In the 1990s there was an Atlantic Salmon program and the project was required to add downstream fish passage provisions. The program has since ceased and the project no longer has downstream passage for Atlantic Salmon.
	Dam or diversion structure height including separately, the height of any flashboards, inflatable dams, etc.	The dam varies in height from less than 1 ft high to about 5.5 feet high. There are two-foot high flashboards on the dam. The dam is seated on top of a natural waterfall.
	Spillway elevation and hydraulic capacity	Dam crest elev. 392.9 ft MSL Top flashboards elev. 394.9 ft MSL
	Tailwater elevation (provide normal range if available)	Elev. +/- 367 ft MSL
	Length and type of all penstocks and water conveyance structures between the impoundment and powerhouse	From the trashrack to the turbine is approximately 60 ft. A six by six foot, 65 foot long reinforced concrete penstock conveys water from the intake structure to the turbine.
	Dates and types of major infrastructure changes	None
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Power Generation
	Source water	Black River
	Receiving water and location of discharge	Black River at base of waterfall.
Conduit	Date of conduit construction and primary purpose of conduit	Current hydropower facilities constructed in 1987.
Impoundment and Watershed	Authorized maximum and minimum water surface elevations **For recertifications: Indicate if these values have changed since last certification**	Normal, maximum and minimum operating water surface elevation is 394.9 ft. There has been no change from previous certification.

[2] https://www.crjc.org/heritage/V07-4.htm

Item	*Information Requested*	*Response (include references to further details)*
	Normal operating elevations and normal fluctuation range **For recertifications: Indicate if these values have changed since last certification**	The Project is operated as run of river. There is no allowable fluctuation of water surface elevation for power generation. The normal, maximum and minimum operating water surface elevation is 394.9 ft. There has been no change from previous certification.
	Gross storage volume and surface area at full pool **For recertifications: Indicate if these values have changed since last certification**	The surface area of the reservoir is approximately 0.4 acres. The volume of the reservoir is approximately 1 acre-foot. There has been no change from previous certification.
	Usable storage volume and surface area **For recertifications: Indicate if these values have changed since last certification**	None. There has been no change from previous certification.
	Describe requirements related to impoundment inflow, outflow, up/down ramping and refill rate restrictions.	Per the water quality certificate: During refill the project must discharge 95 cfs (0.5 cfs/SM) after flashboard repairs.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	Gilman Dam (P-9650) RM 4.3 Fellows Dam (P-9648) RM 4.5 North Springfield USACE (Cavendish) Dam RM 8.3
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	Slack Dam (P-8014) RM 4.1 Lovejoy Dam (P-9649) RM 4.0
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	None.
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control.	Approximately 2 acres.
Hydrologic Setting	Average annual flow at the dam, and period of record used	USGS Gage 01183500 Period of Record (1989-2019) less missing years as described above. Average annual flow: 413 cfs

Item	*Information Requested*	*Response (include references to further details)*
	Average monthly flows and period of record used	USGS Gage 01183500 Period of Record (1989-2019) less missing years. DA Ratio: 1.2 Month — Average Flow (cfs) January — 288 February — 328 March — 613 April — 1292 May — 654 June — 292 July — 196 August — 143 September — 140 October — 278 November — 369 December — 365
	Location and name of closest stream gauging stations above and below the facility	USGS Gage No. 01153000, BLACK RIVER NEAR NORTH SPRINGFIELD, VT
	Watershed area at the dam (in square miles). Identify if this value is prorated and provide the basis for proration.	Site: 191 SM USGS Gage No. 01153000: 158 SM Ratio: 1.2
Designated Zones of Effect	Number of zones of effect	3
	Upstream and downstream locations by river miles	Reservoir RM: 4.2 Tailrace RM: 4.199 "Bypass" RM: 4.199
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1: Reservoir Zone 2: "Bypass" Zone 3: Tailrace
	Delimiting structures or features	Zone 1: Dam/waterfall Zone 2: Dam/waterfall & powerhouse exterior wall Zone 3: Power house exterior wall
	Designated uses by state water quality agency	Supporting Fish, other aquatic life and wildlife Primary and secondary recreation contact.
Pre-Operational Facilities		

Item	*Information Requested*	*Response (include references to further details)*
Expected operational date	Date generation is expected to begin	N/A
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	N/A
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	N/A

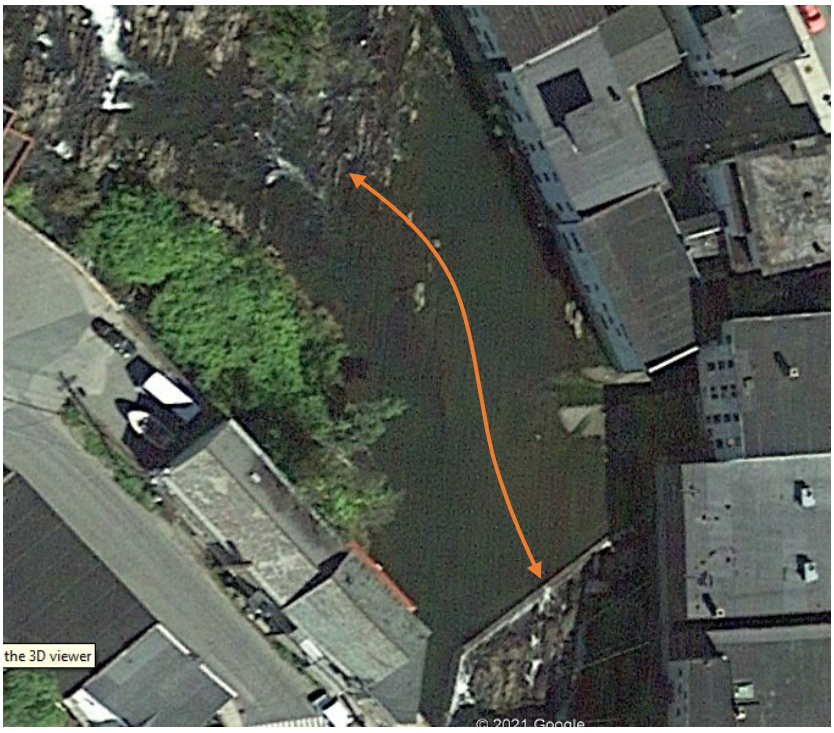

Figure 5. Zone of Effect 1 – Reservoir

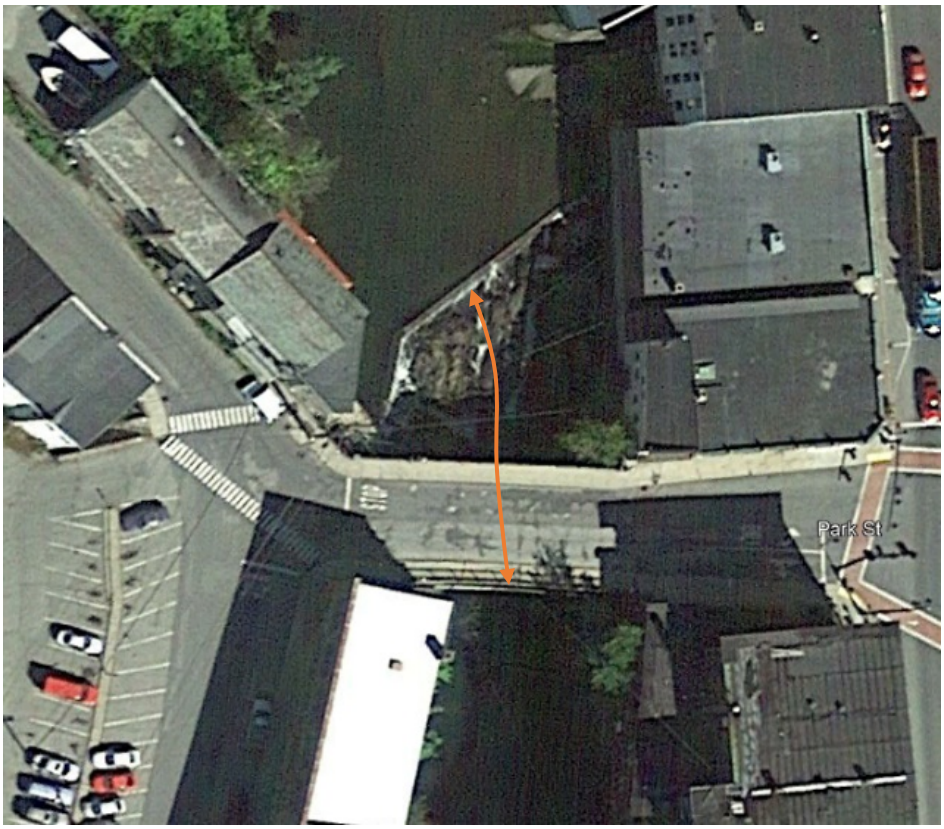

Figure 6. Zone of Effect 2 – "Bypass"

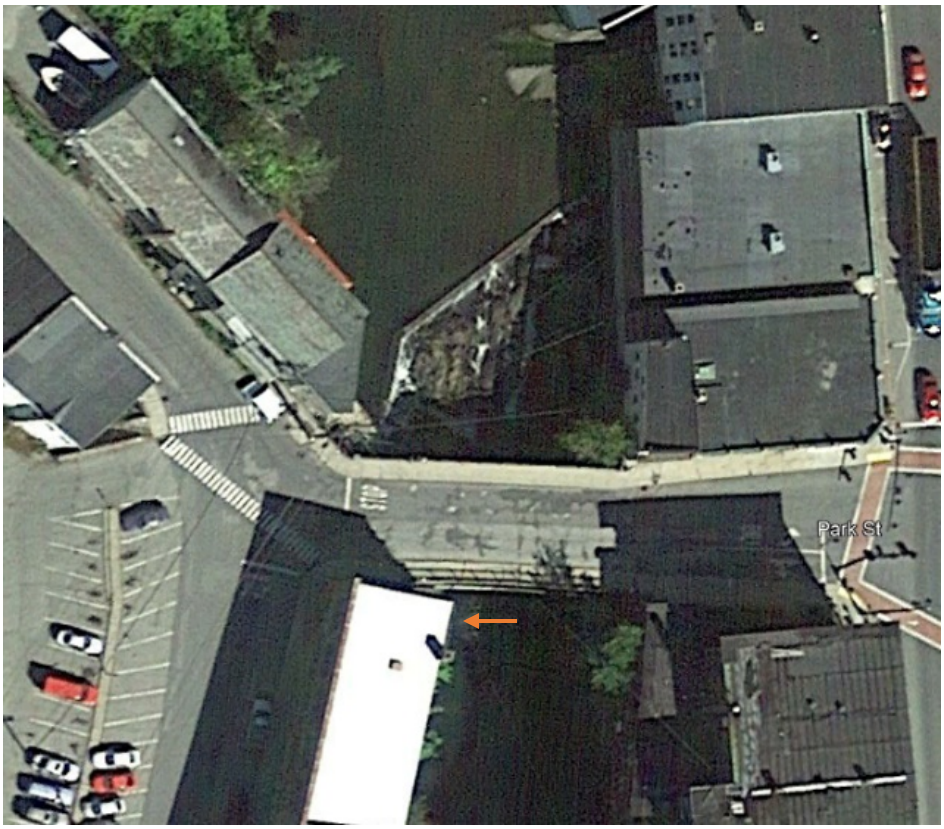

Figure 7. Zone of Effect 3 – Tailrace (under powerhouse)

Table B-1.2. Matrix of Alternative Standard Template Responses for Zones 1, 2 and 3 – Comtu Hydroelectric Project

Zone of Effect # 1: Impoundment

		Alternative Standards				
	Criterion	***1***	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**	X				X
B	**Water Quality**	X				X
C	**Upstream Fish Passage**	X				
D	**Downstream Fish Passage**		X			X
E	**Watershed and Shoreline Protection**	X				X
F	**Threatened and Endangered Species Protection**	X				X
G	**Cultural and Historic Resources Protection**		X			
H	**Recreational Resources**	X				

Zone of Effect # 2: "Bypass"

		Alternative Standards				
	Criterion	***1***	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**		X			X
B	**Water Quality**	X				X
C	**Upstream Fish Passage**	X				
D	**Downstream Fish Passage**	X				X
E	**Watershed and Shoreline Protection**	X				X
F	**Threatened and Endangered Species Protection**	X				X
G	**Cultural and Historic Resources Protection**		X			
H	**Recreational Resources**	X				

Zone of Effect # 3: Tailrace

		Alternative Standards				
	Criterion	***1***	***2***	***3***	***4***	***Plus***
A	**Ecological Flow Regimes**		X			X
B	**Water Quality**	X				X
C	**Upstream Fish Passage**	X				
D	**Downstream Fish Passage**	X				X
E	**Watershed and Shoreline Protection**	X				X
F	**Threatened and Endangered Species Protection**	X				X
G	**Cultural and Historic Resources Protection**		X			
H	**Recreational Resources**	X				

B.2.1 Ecological Flow Standards – Comtu Project

Zone of Influence #1, #2 & #3- <u>Impoundment, Bypass & Tailrace</u> Ecological Flow Standards

Zones of Influence #1 meet alternative standard 1. Zone of influence #2 and #3 meet alternative standard 2. There have been no project changes since the previous LIHI certification. Since the project operates in run-of-river mode and does not seek to operate with store and release, the project is seeking a plus standard for ecological flow regimes.

The site is operated in an instantaneous run-of-river mode with reservoir maintained at elevation 394.9 ft during normal project operation.

The project does not have a bypass reach however, there is a waterfall that maintains an aesthetic flow requirement of 0.5 ft spill (~4 cfs). The applicant is not aware of any science-based methodology for the development of aesthetic flows. Furthermore, original studies that may have been conducted during the original licensing with Agencies are not available as they were completed more than 30 years ago. The project will be going through relicensing starting in 2021 which will likely be supported with modern studies. The applicant is not aware of any deviations from the aesthetic flow requirements in the last five years.

The minimum hydraulic capacity of the turbine is 40 cfs, the maximum hydraulic capacity of the turbine is 202 cfs. See Table 1.

Table 2. Project Flow Operations

Flow Dispatch		
River Inflow (cfs)	**Description of Operations**	
0-43	Inflow is less than the Plant's minimum operating capacity. All flows released over the spillway.	
44-206	Turbine operates from minimum flow of 40 cfs to maximum flow of 202 cfs. Approximately 4 cfs is discharged over the spillway for aesthetics.	
207+	Turbine operates at maximum hydraulic capacity with any flow exceeding 206 cfs discharged over the spillway.	
Flow Distribution		
River Inflow (cfs)	**Spillway**	**Turbine**
0 - 43	0 - 43	0
44-210	4	40-206
210 +	4+	206
Fish Passage (20 cfs)		
Spring Operation	April 1-June 15	
Fall Operation (Voluntary)	September 15-November 15	

Due to the physical layout of the site; there is no real bypass reach (Zone of Effect #2) except for a small section of nearly vertical falls. The turbine discharges back into the riverway at the base of the falls. The project is operated in run-of-river mode. The elevation of the impoundment is monitored using a pressure transducer that provides water level information to the project's programmable logic controller (PLC). The PLC automatically adjusts the blade setting of the turbine or shuts the turbine down, in accordance with the water level readings.

Zones of Effect #1 and #3, (impoundment and tailrace, respectively), does not include a bypass reach. Since Zone of Effect #1 is upstream of any diversions, it is not affected by the Project. Since the Project is operated in instantaneous run-of-river mode with all inflows equaling outflows, Zone of Effect #3 is not affected in any way by the Project since it is downstream of all Project diversions.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license. All terms of the WQC have been complied with in the past five years since the previous relicensing.

B.2.2 Water Quality Standards – Comtu Project

Zone of Effect #1, #2 and #3- Impoundment, Bypass & Tailrace Water Quality Standards

Zones of Influence #1, #2 and #3 have a de minimis effect on water quality. There have been no Project changes since the previous LIHI certification. Since the project operates in run-of-river mode and does not seek to operate with store and release, the project is seeking a plus standard for ecological flow regimes.

The 2012 Basin 10 Water Quality Management Plan [3] issued by the Vermont Agency of Natural Resources provides information on the water quality of the Black River in the Project area.

According to the 2012 report, the reach of river that the Project is located on (VT10-11) is classified is an impaired water. Pollutants include *E. coli* from combined sewer overflow and is use impaired for contact recreation. The waste water treatment plant is located downstream of the Comtu Falls Project. The Comtu Falls Project is not identified as a source of any known impairments.

According to the 2016 State of Vermont Stressed Waters List issued by the Vermont Department of Environmental Conservation[4] the Black River at VT10-11 is impaired due to sediment, nutrients and *E. coli*. The source of the problems are described as, "contributions from upstream urban runoff, land development". Stressed uses include aesthetics, aquatic life (biota and/or habitat support) and direct contact recreation.

The project is currently in compliance with all State and Federal resource Agency recommendations in the license.

Outreach to VDEC was completed with regard to the WQC. VDEC indicated that the current WQC for the project is valid. Generally, unless a WQC has a specific expiration date or termination provision it is valid until replaced, surrendered, terminated or super-ceded. See attached correspondence.

[3] https://anrweb.vt.gov/PubDocs/DEC/WSMD/Mapp/Docs/mp_basin10final.pdf
[4] https://dec.vermont.gov/sites/dec/files/documents/wsmd_mp_stressed_waters_list_2016.pdf

B.2.3 Upstream Fish Passage Standards – Comtu Project

Zone of Effect #1, #2 & #3- Impoundment, Bypass & Tailrace Upstream Fish Passage Standards

Zone of Influence #1, #2 and #3 have a de minimis effect on upstream fish passage. There have been no project changes since the previous LIHI certification.

There are several dams downstream of the Project including the Slack and Lovejoy Dams. To the best of our knowledge, upstream fish passage is not provided at all of the downstream dams and Comtu Falls is not currently a constraint to upstream fish passage.

There are no known survey data that include observations of wild migratory species for the project area. A review of the 2019 Cavendish project PAD states that there are no migratory fish species located in the vicinity of the project as anadromous fish species encounter barriers further downstream in the Connecticut River system before they would reach the Black River.

The Stage I review requested additional information on a statement made by a VANR 1995 letter stating "there is no specific evidence that the Comtu Falls is a natural barrier to upstream salmon passage". The historic record is unclear on the presence of wild Atlantic salmon in the river. The area has been developed with dams since the 1700s. The relationship between the Comtu Dam on the Black river and historic Atlantic salmon usage is not well known.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license.

B.2.4 Downstream Fish Passage and Protection Standards – Comtu Project

Zone of Effect #1, #2 & #3- <u>Impoundment, "Bypass" & Tailrace</u> Downstream Fish Passage Standards

Zones of Effect #1 meets alternative standard 2. Zone of effect #2 and #3 meet alternative standard 1. There have been no project changes since the previous LIHI certification. The project continues to operate the downstream bypass even though the target species (Atlantic salmon) are no longer present. Since the project operates the downstream fish passage in a voluntary capacity during the fall season a plus standard is being sought. It should be noted that the same justification for plus standard was utilized at the downstream Slack Dam in 2017 which resulted in an extended certification term. From the Slack Dam certification:

> *Condition 2. For the full term of the LIHI certification, the owner shall continue to operate the downstream fishway at Slack Dam in the spring from April 1 to June 15 and in the fall from September 15 to November 15 or as otherwise requested by the state fisheries agency. This condition is associated with the 8-year extended term of the new certificate.*

There are no naturally occurring migratory fish in the Black River in the vicinity of the project. There are numerous projects downstream of Comtu Falls impeding upstream fish passage. The Project has a requirement to open a downstream bypass at the dam for downstream migrating stocked salmon smolts in the spring months (April 1-Jume 15th). As a requirement of the previous LIHI certification, Comtu Falls voluntarily increased the season for this bypass to be operational to include September 15th to November 15th. The bypass utilizes approximately 25 cfs during operations. However, the Salmon stocking program was stopped in 2012. A 2015 letter from VDEC indicated that to ensure the safe passage of any remaining Atlantic salmon smolts (already in the system as of 2012), the downstream fish passage should continue to operate at least until 2016. Despite it currently being 5 years past 2016, the applicant continues to voluntarily operate the fish passage to benefit resident species and in support of the water quality management plan for the Ottauquechee and Black Rivers (2015 VTDEC letter). The fish passage consists of a weir in the concrete dam adjacent to the intake structure. The weir is approximately 2.5 feet wide by 3.0 feet deep and discharges water into a concrete plunge pool approximately 3 feet deep. See Photo 3.

Photo 3. Photo of fish passage immediately after construction.

The estimated approach velocity at the trashrack is approximately 1.25 ft/s.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license.

B.2.5 Shoreline and Watershed Protection Standards – Comtu Project

Zone of Effect #1, #2 & #3- <u>Impoundment, "Bypass" & Tailrace</u> Shoreline and Watershed Protection Standards

Zone of Effect #1 has a de minimis effect on shoreline protection and watershed protection. There are no provisions or requirements for shoreline management in the FERC license or 401 WQC. The project operates in instantaneous run-of-river therefore causing no unnatural water surface fluctuations. Since the project operates in run-of-river mode and does not seek to operate with store and release, the project is seeking a plus standard for ecological flow regimes.

Zones of Effect #2 and #3 have a de minimis effect on shoreline protection and watershed protection as there is no natural shoreline (all of the shoreline of the limited impoundment are armored or developed by infrastructure). There have been no Project changes since the previous LIHI certification.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license.

B.2.6 Threatened and Endangered Species Standards – Comtu Project

Zone of Effect #1, #2 & #3- Impoundment, Bypass & Tailrace

Threatened and Endangered Species

Zones of Effect #1, #2 and #3 have a de minimis effect on threatened and endangered species. There have been no Project changes since the previous LIHI certification. Since the project proactively evaluates the presence of threatened and endangered species to identify if there have been any changes, a plus standard is being sought.

The USFWS's Information for Planning and Consultation (IPaC)[5] online tool was utilized to complete a site-specific review of threatened and endangered species and critical habitats. The IPaC review identified one threatened mammal, the Northern Long-eared Bat (NLEB) (*Myotis septentrionalis*), potentially within the project area. In addition, a flowering plant, Northeastern bulrush (*Scirpus ancistochaetus*) was identified as potentially occurring in the Project area. Note that the IPaC review specified that there are no critical habitats within the Project area for either species. The full IPaC report can be found in Attachment C.

The Northeastern bulrush is an obligate wetland species requiring habitat characteristics consistent with an emergent wetland cover type, of which there are none in the Project area, therefore the likelihood of its occurrence within any of the Project's Zones of Effect is improbable.

M. septentrionalis is a medium-sized bat which winters in caves and mines with other bats. During the summer they can be found roosting in colonies or singly. Summer roosting usually occurs in cavities or crevices of both live and dead trees and occasionally in caves and mines. USFWS reports that summer roosting locations appear to be flexible. Foraging occurs between dusk and dawn and primarily occurs in the understory of forested areas. The species has been in decline in large part due to the outbreak of white-nose syndrome. There are also no potential roost trees or hibernacula which could provide habitat for the Northern long-eared bat within any of the Project's Zones of Effect.

Normal operations and maintenance of the project does not have an impact on the Northern Long-eared bat. The Project is located at a former industrial site and there is no landscaping or vegetation management that would have the potential to impact the NLEB or Northeastern Bulrush.

A review of the State of Vermont's Rare Threatened and Endangered Species GIS mapping information did not show any rare, threatened or endangered species in the Project area. Accessed July 2020. See Figure 5.

[5] https://ecos.fws.gov/ipac/

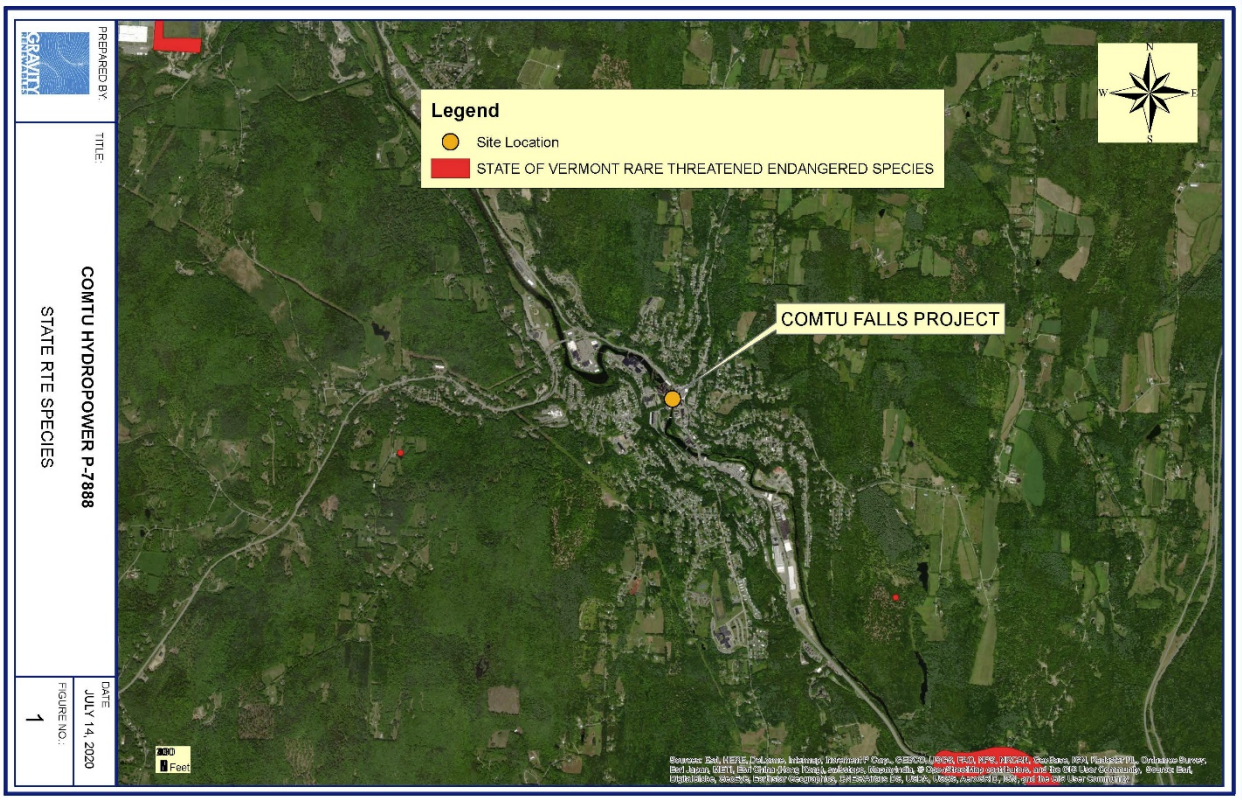

Figure 8. State of Vermont RTE Species Map of Project Area.

Figure 8 is a map of RTE species in the project area. A red overlay (i.e. bottom right corner) indicates areas where RTE species may be known to located. As there is no red overlay in the area of the project it appears that there are no RTE species in the project location.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license.

B.2.7 Cultural and Historic Resources Standards – Comtu Project

Zone of Effect #1, #2 & #3- Impoundment, Bypass & Tailrace Cultural and Historic Resources

Zones of Effect #1, #2 and #3 meet alternative standard 2. There have been no Project changes since the previous LIHI certification and SHPO consultation is required prior to any construction activities.

There are no requirements in the license regarding cultural resources protection.

From the Town of Springfield website[6]:

> *Springfield, Vermont was chartered August 20, 1761. The town, part of Windsor County, celebrated 250 years in 2011. Springfield history is well known for its development into a mill town. Located along the Black River companies used the power of the falls to power their machines. It is located in the center of what is known as the Precision Valley and was the home of the Vermont Machine tool industry. Springfield played an important role in production of machine tools during World War II. It was for their war efforts that Springfield was placed as the 7th most important bombing target in the country. Springfield has machine shops that are still in operation today."*

From the National Register of Historic Places Inventory Nomination Form, Comtu Falls Dam is listed as item no. 53 (Number 62 on the 1986 Amended district form) of the Springfield Downtown Historic District.[7] From the application:

> "The Comtu Falls Dam is a concrete dam approximately 106 feet long. It was built in 1902 and repaired in 1952 during the upgrading of a hydroelectric station on site. Dams have stood in the general area since 1774 when William Lockwood built the first sawmill in Springfield. Beers 1896 map shows a dam a few hundred feet upstream of the present one. "

It appears that the application was accepted with the Comtu Falls Dam include in the Springfield Downtown Historic District. [8]

Although there are not any site-specific cultural or historic requirements; by continuing the operation of the hydroelectric facilities, Comtu Falls Corp. is preserving the foundation of the previous industrial use of the waterway.

The Project is currently in compliance with all State and Federal resource Agency recommendations in the license.

[6] https://www.springfieldvt.com/history-c1cul
[7] https://npgallery.nps.gov/GetAsset/ec265cfa-b84e-420c-ae3c-a646c6a48175
[8] https://www.crjc.org/heritage/V07-4.htm

B.2.8 Recreational Resources Standards – Comtu Project

Zone of Effect #1 & #3- <u>Impoundment, "Bypass" & Tailrace</u>

Recreational Resources

Zones of Effect #1, Zone #2 and #3 have a de minimis effect on recreational resources. There have been no Project changes since the previous LIHI certification.

There are no requirements in the license regarding recreation at the site.

The reservoir is very small and extends from the Comtu Falls Dam approximately 150 feet upstream. The falls and tailrace area are not safety accessible and are bordered by the industrial and commercial buildings (not owned by Comtu Falls Corporation).

The Project is currently in compliance with all State and Federal resource agency recommendations in the license.

Attachment A

1/12/89

WATER QUALITY CERTIFICATION AMENDMENT

(P.L. 92-500, Section 401)

In the matter of: Comtu Falls Corporation
RR 2 Box 2436
Brandon, VT 05733
Application for Amendment to Comtu Falls Hydroelectric Facility Water Quality Certification

The Water Quality Division of the Vermont Department of Environmental Conservation (the Department) has reviewed a request for amendment filed by letter dated December 1, 1988 from Comtu Falls Corporation (the applicant) and finds:

1. The applicant proposes to replace the existing 250 kw turbine/generator unit with a 400 kw unit. The second smaller 150 kw unit approved in a certification amendment issued October 11, 1983 will not be installed.

2. The existing Francis unit has a hydraulic capacity of 105 cfs to over 200 cfs. The new Kaplan unit has a capacity of 188 cfs at 30 feet of head and 83% efficiency and can operate with flows as low as 40 cfs. Flows will, therefore, have to exceed 44 cfs (turbine capacity plus spillage) in order for the system to be on line. The project reconfiguration with the smaller 150 kw unit was to have been able to generate down to 44 cfs also.

3. The only exterior work contemplated is the replacement of the existing draft tube with an elbow draft tube.

CONDITIONS

Based on its review and findings, the Department hereby amends the Comtu Falls Hydroelectric Facility Water Quality Certification by adding Conditions F and G and reaffirming the operative conditions of the original certification and the certification amendment of October 11, 1983:

A. An instantaneous streamflow of no less than 0.5 inch of water shall be discharged over the full length of the dam crest at all times when available from inflow to the impoundment. When instantaneous inflows fall below 44 cfs, all inflows to the impoundment shall be passed over the dam. The facility shall be operated in a strict run-of-the-river mode, with instantaneous outflows equaling instananeous inflows.

B. The applicant shall not discharge petro chemicals, wet concrete, or debris to State waters during construction or operation of the facility. Any debris removed from the spillway or trash racks shall be properly disposed of off-site.

C. Any significant changes to the project must be submitted to the Department of Environmental Conservation for prior review and approval.

D. Any impoundment desilting shall be carried out in accordance with the Agency of Natural Resources Desilting Policy.

E. If, at any time in the future, the Department finds that operation of this facility causes substandard water quality in the Black River, the Department may require changes to the operational procedure as necessary in order to insure that the standards are not violated.

F. When requested by the Department of Fish and Wildlife as part of plans for the restoration of Atlantic salmon to the Connecticut River watershed, the applicant shall submit a plan for downstream passage of Atlantic salmon to the Department of Fish and Wildlife for approval. This plan shall include the design of the screens, trashracks or other such devices and the means for providing downstream

passage of fish at the dam. The project shall be modified and operated consistent with the approved passage plan within one year of the Department of Fish and Wildlife's request. The applicant shall file a copy of the approval letter and approved plan with the Department within two weeks of the Department of Fish and Wildlife's approval.

G. A waiver of Condition A is allowed where the applicant must draw the pond to perform flashboards repair. Under such circumstances, the drawdown is not to exceed 6 inches below the dam crest, and the project must release a minimum instantaneous flow of 95 cfs (0.5 cfs/sq. mi.) during the refill period. No other type of drawdown is to occur without prior approval by the Department.

Dated at Waterbury, Vermont this 12th day of January, 1989.

Patrick Parenteau

Patrick Parenteau, Commissioner
Department of Environmental Conservation

vld

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Comtu Falls Corporation and Comtu Falls Associates — Project No. 7888-001

ORDER ISSUING LICENSE
(Minor Project)

(Issued July 18, 1986)

Comtu Falls Corporation and Comtu Falls Associates have filed a joint license application under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Comtu Falls Project, located in Windsor County, Vermont, on the Black River. The project would affect the interests of interstate or foreign commerce.

Notice of the application has been published. The motions to intervene that have been granted and the comments filed by agencies and individuals have been fully considered in determining whether to issue this license, as discussed below.

Summary of Findings

The proposed project would consist of an existing concrete dam, a concrete penstock and an existing reinforced concrete powerhouse containing one existing generating unit and one new generating unit.

The project would have an installed capacity of 400 kW and would generate an estimated 1,300,000 kWh annually. A proposed project is potentially feasible so long as its projected levelized cost is less than the long-term levelized incremental energy cost of any utility in the region that can be served by the project. The staff has identified projected incremental energy costs in the region as high as 63.7 mills/kWh. Since the levelized cost of energy from the project is estimated to be 53.0 mills/kWh, the staff is reasonably confident that there will be a market for the project power at a price sufficient to support the project's construction and operation.

The dam is safe and adequate for continued operation. The Commission's New York Regional Office staff inspected the project on March 29, 1984, and did not observe any matters requiring Commission action. The dam is classified as low hazard.

An Environmental Assessment (EA) was issued for this project. Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. Issuance of this license is not a major federal action significantly affecting the quality of the human environment.

The Director, Office of Hydropower Licensing, concludes that the project would not conflict with any planned or authorized development, and would be best adapted to comprehensive development of the waterway for beneficial public uses.

The Director orders:

(A) This license is issued to Comtu Falls Corporation and Comtu Falls Associates (licensee) for a period of 40 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Comtu Falls Project. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G:

Exhibit G-	FERC No. 7888-	Showing
1	5	Location Map
2	6	Project Map

(2) Project works consisting of: (a) the 4-foot-high, 128-foot-long concrete gravity Comtu Falls Dam with a crest elevation of 392 feet mean sea level; (b) 2-foot-high flashboards; (c) a small impoundment; (d) an intake structure at the west side of the dam; (e) a 6-foot by 6-foot, 65-foot-long reinforced concrete penstock; (f) a powerhouse with a 250-kW and a 150-kW turbine-generator units; (g) the 600-volt induction generator leads, a 600/4,160-volt, 300-kVA transformer bank, a 2,400-volt synchronous generator lead, a 2,400/4,160-volt, 500-kVA transformer bank, a 20-foot-long, 4,160-volt transmission line; and (h) other appurtenances.

The project works generally described above are more specifically shown and described by the following portions of Exhibits A and F:

Exhibit F	FERC No. 7888-	Showing
1	1	Plan View
2	2	Existing Power Station
3	3	Proposed Powerhouse Addition
4	4	Dam Cross Section

Exhibit A. Page 4 (vii) of the application filed on February 7, 1984.

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibit G described above and those sections of Exhibits A and F in paragraph B above are approved and made part of the license.

(D) The following sections of the Act are waived and excluded from the license for this minor project:

> 4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the Act that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This license is subject to the articles set forth in Form L-15, (October 1975), entitled "Terms and Conditions of License for Unconstructed Minor Project Affecting the Interests of Interstate or Foreign Commerce", except Article 15. The license is also subject to the following additional articles:

Article 201. The licensee shall pay the United States the following annual charge, effective the first day of the month in which this license is issued:

> For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 530 horsepower.

Article 202. The licensee shall clear and keep clear to an adequate width all lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which result from maintenance, operation, or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed.

All clearing of lands and disposal of unnecessary material shall be done with due diligence to the satisfaction of the authorized representative of the Commission and in accordance with appropriate federal, state, and local statutes and regulations.

Article 301. The licensee shall commence construction of project works within two years from the issuance date of the license and shall complete construction of the project within four years from the issuance date of the license.

Article 302. The licensee shall file one copy with the Commission's Regional Director and two copies with the Director, Division of Inspections, of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouse, and water conveyance structures, at least 60 days prior to start of construction. The *Director*, Division of Inspections, may require changes in the plans and specifications to assure a safe and adequate project.

Article 303. The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall file with the Commission's Regional Director and Director, Division of Inspections, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

Article 304. The licensee shall within 90 days of completion of construction file for approval by the Director, Division of Project Management, revised Exhibits A, F, and G to describe and show the project as-built.

Article 401. The licensee shall discharge from the Comtu Falls Project, a continuous minimum flow of 4 cubic feet per second (cfs) over the dam spillway, or inflow to the project, whichever is less. When the flow of the Black River, as measured immediately upstream of the project dam, is less than 44 cfs, the licensee must pass all flow over the dam spillway. These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee and upon mutual agreement among the licensee, the Vermont Agency of Environmental Conservation, and the U.S. Fish and Wildlife Service.

Article 402. Prior to any future construction at the project, the licensee shall consult with the Vermont State Historic Preservation Officer (SHPO) about the need for cultural resources studies or a management plan. Documentation of the nature and extent of consultation, including a cultural resources management

plan, a schedule to conduct any necessary investigations before construction, and a copy of a letter from the SHPO accepting the plan, shall be filed with the Commission 6 months before any construction activity. The licensee shall make funds available in a reasonable amount for any required work. If any previously unrecorded archeological or historic properties are encountered during construction or development of any project works or other facilities at the project, construction activities in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the eligibility of the properties for listing on the National Register of Historic Places, and the licensee shall consult with the SHPO to develop an appropriate plan for avoidance or mitigation. If the licensee and the SHPO cannot agree on the amount of money to be expended for specific project archeological or historical purposes, the Commission reserves the right to require the licensee to conduct, at the licensee's own expense, any such work found necessary.

Article 403. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining

walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certificates or permits have been obtained;

(3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions

to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(F) This order is issued under authority delegated to the Director and is final unless appealed under Rule 1902 to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order unless otherwise ordered by the Commission. The licensee's failure to appeal this order shall constitute acceptance of the license.

for Richard T. Hunt
Director, Office of
Hydropower Licensing

ATTACHMENT
E-2 Form

FEDERAL ENERGY REGULATORY COMMISSION

§ 4.106 Standard terms and conditions of exemption from licensing

Any exemption from licensing granted under this subpart for a small hydroelectric power project is subject to the following standard terms and conditions:

(a) Article 1. The Commission reserves the right to conduct investigations under sections 4(g), 306, 307, and 311 of the Federal Power Act with respect to any acts, complaints, facts, conditions, practices, or other matters related to the construction, operation, or maintenance of the exempt project. If any term or condition of the exemption is violated, the Commission may revoke the exemption, issue a suitable order under section 4(g) of the Federal Power Act, or take appropriate action for enforcement, forfeiture, or penalties under Part III of the Federal Power Act.

(b) Article 2. The construction, operation, and maintenance of the exempt project must comply with any terms and conditions that the United States Fish and Wildlife Service and any state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources or to otherwise carry out the purposes of the Fish and Wildlife Coordination Act, as specified in Exhibit E of the application for exemption from licensing or in the comments submitted in response to the notice of the exemption application.

(c) Article 3. The Commission may revoke this exemption if actual construction of any proposed generating facilities has not begun within two years or has not been completed within four years from the date on which this exemption was granted. If an exemption is revoked under this article, the Commission will not accept from the prior exemption holder a subsequent application for exemption from licensing or a notice of exemption from licensing for the same project within two years of the revocation.

(d) Article 4. This exemption is subject to the navigation servitude of the United States if the project is located on navigable waters of the United States.

(e) Article 5. This exemption does not confer any right to use or occupy any Federal lands that may be necessary for the development or operation of the project. Any right to use or occupy any Federal lands for those purposes must be obtained from the administering Federal agencies. The Commission may accept a license application by any

qualified license applicant and revoke this exemption, if any necessary right to use or occupy Federal lands for those purposes has not been obtained within one year from the date on which this exemption was granted.

(f) Article 6. In order to best develop, conserve, and utilize in the public interest the water resources of the region, the Commission may require that the exempt facilities be modified in structure or operation or may revoke this exemption.

(g) Article 7. The Commission may revoke this exemption if, in the application process, material discrepancies, inaccuracies, or falsehoods were made by or on behalf of the applicant.

(h) Article 8. Any exempted small hydroelectric power project that utilizes a dam that is more than 33 feet in height above streambed, as defined in 18 CFR 12.31(c) of this chapter, impounds more than 2,000 acre-feet of water, or has a significant or high hazard potential, as defined in 33 CFR Part 222, is subject to the following provisions of 18 CFR Part 12, as it may be amended:

(1) Section 12.4(b)(1)(i) and (ii), (b)(2)(i) and (iii), (b)(iv), and (b)(v);

(2) Section 12.4(c);

(3) Section 12.5;

(4) Subpart C; and

(5) Subpart D.

For the purposes of applying these provisions of 18 CFR Part 12, the exempted project is deemed to be a licensed project development and the owner of the exempted project is deemed to be a licensee.

(i) Article 9. Before transferring any property interests in the exempt project, the exemption holder must inform the transferee of the terms and conditions of the exemption. Within 30 days of transferring the property interests, the exemption holder must inform the Commission of the identity and address of the transferee.

70 FERC ¶ 62,103

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Comtu Falls Corporation

Project No. 7888-009
Vermont

ORDER AMENDING LICENSE

(Issued February 21, 1995)

On January 10, 1989, the Commission authorized an installed capacity of 400 kW.[1] for the Comtu Falls Project, FERC No. 7888. Since the project was constructed, the generating unit has been able to operate with a full capacity of 460 kW.

Under excessive spring runoff condition and infrequent storm events, the generating unit can produce a maximum output of 460 kW. The increase in the installed capacity does not affect the project's operation or its hydraulic capacity. The issuance of this order is necessary to reflect the project's maximum capacity, and revise the annual charge from 530 horsepower to 610 horsepower. The increase in the installed capacity is not substantial, therefore, the effective day for the revised annual charge is the first day of the month in which this order is issued.[2]

The licensee is required to install a new nameplate showing 460 kW on the generator, and to file a revised exhibit M describing the actual project works, including the description the turbine-generator unit.

The change in installed capacity does not materially affect the Commission's determination that the Comtu Falls Project is best adapted to a comprehensive plan for the waterway.

The Director orders:

(A) The license[3] for the Comtu Falls Project, FERC No. 7888, is amended in this order, effective the first day of the month in which this order is issued.

[1] 46 FERC ¶ 62,020, Order Approving Exhibit A and F Drawings.

[2] See Order On Rehearing of the International Falls Hydroelectric Project, P-5223-021. 66 FERC ¶ 61,082.

[3] 36 FERC ¶ 62,046, Order Issuing License (Minor Project) issued July 18, 1986.

(B) Ordering paragraph B(2)f of the license is revised to read:

... a Powerhouse with one 460-kW turbine-generator unit; ...

(C) Article 201 of the license is revised to read:

For the purpose of reimbursing the United States for the costs of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 610 horsepower, effective the first day of the month in which this order is issued.

(D) Within 30 days of issuance of this order, the licensee shall install a nameplate on the generator, to indicate the rated capacity of 460 kW. Within 30 days upon installation of the nameplate, the licensee shall provide a photograph of the nameplate to the Commission with a copy to the Commission's New York Regional Office, for verification.

(E) The licensee shall file a revised exhibit M showing the actual project works including the description of the turbine-generator unit, with the Commission for approval within 30 days of the issuance of this order.

(F) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

J. Mark Robinson
Director, Division of Project
Compliance and Administration

71 FERC ¶ 61,263

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Comtu Falls Corporation) Project No. 7888-010

ORDER AMENDING LICENSE

(Issued June 1, 1995)

On September 22, 1994, the Commission issued an order invoking its reserved authority to require Comtu Falls Corporation (Corporation) to file a downstream fish passage plan for its Comtu Falls Project after consultation with the U.S. Fish and Wildlife Service (FWS) and the Vermont Department of Fish and Wildlife (Vermont). 1/ The Corporation filed such a plan on October 25, 1994. On January 20, 1995, a notice was issued of the availability of a draft Environmental Assessment (draft EA) of the plan filed by the Corporation, as well as an alternative design proposed and recommended by the Commission's staff. Comments on the draft EA were submitted by the FWS, Vermont, the State Historic Preservation Officer, and the Corporation. The Corporation filed responses to the comments by the agencies. On March 29, 1995, the Commission issued an order requiring the installation of interim fish passage measures, pending completion of a final EA that would address which of several possible designs would be the best, and whether the Corporation should be required to install a facility of that design in view of possible adverse effects on the environment, economics, safety, historic, or aesthetic resources of the project. 2/

The final Environmental Assessment (EA), issued as an appendix to this order, concludes that the planting of salmon in the Black River upstream of the project is beneficial to the Atlantic salmon restoration effort for the Connecticut River Basin, and that downstream fish passage facilities are needed at the Comtu Falls Project to provide for downstream migration of juvenile salmon smolts. 3/ Furthermore, the EA approves the

1/ 68 FERC ¶ 61,356.

2/ 70 FERC ¶ 61,354.

3/ During their earliest life stage, one to two weeks old, salmon are called "fry." Thereafter, until they begin active migration to the sea, they are called "parr." During their period of downstream migration, they are called "smolts" or juvenile salmon.

Corporation's design for such facilities and concludes that their installation and operation would have no significant adverse effects on the environment, the economics or safety of the project, or its aesthetic or historic resources. The Commission concurs in the conclusions of the EA and will amend the Corporation's license to require the installation and operation of the fishway facility with the design proposed by the Corporation.

BACKGROUND

The Comtu Falls Project is situated on the Black River in Springfield, Vermont. The 460-kilowatt project includes a powerhouse, an intake with trashrack having 1.5-inch clear bar spacing and set at a 45 degree angle to the intake, and a dam approximately 128 feet long with 2-foot-high flashboards, situated on the top of a natural falls. The dam tapers from 5.5 feet high at its western end to nothing with irregular bedrock comprising the last 17 or 18 feet as it extends across the river from the intake to the east shore. Average generation is estimated at 2,367,700 Kwh annually.

The history of this proceeding has been described in detail in the Commission's orders of September 22, 1994, January 18, 1995, 4/ and March 29, 1995. The September 22 order was issued under the authority of Article 11 of the Corporation's license 5/ because the licensee did not agree voluntarily to install downstream fish passage facilities as requested by the FWS and the Commission's staff. The Corporation has presented numerous arguments in the course of these proceedings against having to install the requested facilities. We have dealt with

4/ 70 FERC ¶ 61,031.

5/ Article 11 of the Comtu Falls Project license provides:

> The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate ... such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project ... is located, after notice and opportunity for hearing.

36 FERC at p. 63,125, ordering paragraph (E), incorporating by reference the standard articles in Form L-15, 54 FPC 1883, 1886 (1975).

these arguments in the previous orders. The questions remaining, as we said in the January 18 order, are whether the planting of salmon in the Black River upstream of the project was beneficial to the restoration effort, 6/ what would be the best design for a downstream passage facility, and whether the best designed fishway would have detrimental effects that might outweigh the benefit to the fishery environment. 7/

The March 29 order required the Corporation to install interim fish passage measures at the Comtu Falls Project by removing a section of the project's flashboard for a two and one-half month period beginning April 1, 1995, or as soon as the removal could be practically effectuated. The Corporation filed a letter on April 24, 1995, indicating that the interim fish passage measures were in operation by April 12, 1995. 8/

6/ In the March 29, 1995 order requiring interim fish passage measures, we reached the tentative conclusion, on the basis of information in the draft EA and other record evidence, that using the Black River above Comtu Falls as nursery habitat for salmon fry would help to achieve the goals of Atlantic salmon restoration in the Connecticut River Basin. 70 FERC ¶ 61,354 at p. 62,042. In this order we make a definitive finding that such stocking is beneficial to the restoration effort on the basis of the final EA issued with this order.

7/ 70 FERC at p. 61,104.

8/ The Corporation also asserts that downstream passage facilities at some of the other dams above and below Comtu Falls had not yet been installed, or at least were not visible in photographs taken by the Corporation on April 14, 1995.

The Cavendish Project (FERC No. 2489) has interim facilities operating and has plans and construction schedules for permanent facilities approved. The licensees of Fellows Dam (FERC No. 9648), Lovejoy Dam (FERC No. 9649) and Gilman Dam (FERC No. 9650), depicted in the Corporation's photographs, have all been requested by the Commission's staff to provide plans for interim measures for downstream passage to be initiated this year, and the recommendations of the FWS for permanent facilities. The licensees have indicated that the only route for passage at these projects in the interim (1995) will be spillage over the crest of the dams, since none of these projects have operable flashboards.

At Slack Dam, the other project depicted in the Corporation's photographs, an exempted project, mandatory

(continued...)

DISCUSSION

The final EA concludes that the stocking of Atlantic salmon fry in the reaches of the Black River above Comtu Falls will be beneficial to the efforts to restore Atlantic salmon to the Connecticut River Basin, and that the installation, operation, and maintenance of the downstream fish passage facilities at the Comtu Falls Project is necessary for the salmons' safe downstream migration. The FWS has stated that, in order to achieve successful salmon restoration in the Connecticut River Basin, salmon habitat in the basin must be used to the fullest to produce smolts and future returns; that the Black River above Comtu Falls has been identified as suitable habitat; and that salmon fry have recently become available in sufficient quantities to stock more tributaries than those originally designated for the fry-release program.

In early 1993, 23,124 Atlantic salmon fry were stocked in the Black River between Ludlow and Cavendish, Vermont, above Comtu Falls. In the fall of 1993, 67,767 0+ parr 9/ were stocked. In 1994, 209,200 salmon fry were stocked, and according to the FWS, greater numbers are expected to be stocked in 1995. 10/ Mortality rates for entrained juvenile fish at the Comtu Falls Project may range from 7.6 to 13 percent, averaging 11 percent. 11/ Smolts migrating downstream on the Black River pass numerous dams, and fish passage facilities at these dams are needed to ensure maximum survival. Returning adult salmon that have been reared in the Black River will contribute to the restoration program by providing a source of eggs for fry production from Connecticut River stock. 12/

The EA also concludes that the design for permanent fish passage facilities submitted by the Corporation in October 24, 1994, is superior to alternative designs proposed by the Commission's staff in the draft EA and the FWS in its comments on the draft EA. The Corporation proposes replacing 33 feet of the

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8/(...continued)
conditions require the licensee to provide fish passage facilities when prescribed. According to the FWS, the facilities have been installed and the exemptee is prepared to operate the facility upon FWS' request.

9/ 0+ parr are salmon between two weeks and one year of age.

10/ Final EA, attached to this order, at 6.

11/ These mortality rates are based on studies of Kaplan turbines, the type used at the Comtu Falls Project.

12/ Final EA at 10.

2-foot-high flashboards adjacent to the proposed discharge weir with a 2-foot-high fixed concrete crest. A 2.5 foot wide by 2.0 foot high discharge weir would be opened in this concrete cap at the west abutment of the dam and trashrack to produce a 20-cubic feet per second flow to attract/convey emigrating smolts. The flow would discharge into a 3-foot-deep plunge pool to be constructed on the bedrock falls below the discharge. The Corporation also proposes to cap 18 feet of the east edge of the dam to the height of the flashboards to cover the exposed bedrock. The remaining 74 feet of the dam would retain the 2-foot-high flashboards. The estimated cost of the facility would be between $75,000 and $100,000.

In the draft EA, the staff proposed a downstream passage facility consisting of an 18- to 24-inch diameter PVC pipe that would be fitted into the flashboard section nearest the trashrack or into a collection box constructed in the same location to convey emigrating salmon smolts to the tailwater pool. The estimated cost of this alternative would be less than $10,000. However, because of ice in the Black River in the winter, the staff concluded that the bypass entrance and section of the conveyance pipe would probably have to be replaced every year, and would require additional maintenance because of clogging from debris.

The FWS proposed a passage facility consisting of a notch approximately 18-inches to two-feet deep, and 3 feet wide, with removable stoplogs that would allow for bypass depth adjustments as headpond levels change. The FWS proposal would include the plunge pool as proposed by the Corporation. The advantage of the FWS proposal is that it would provide for attraction/conveyance flows even when the flashboards might be washed out by flooding or damaged by ice. However, the staff concluded that, with the elevation of the top of the penstock higher than the elevation of the crest of the dam, flow patterns could develop that would affect project operation, but more importantly, the efficiency of the fish passage facility. Operation of the FWS alternative during low headpond levels would create irregular flow patterns, such as eddies and vortices, in front of the project's intake that could interfere with the guidance efficiency of the trashrack as well as project operation. Such problems could require modifications to the intake, with the result being that operation of the FWS alternative could be substantially more expensive than the Corporation's proposed design.

Finally, the EA concludes that the installation, operation, and maintenance of the fish passage facilities proposed by the Corporation will have no significant adverse effects on the environment, or the economics, safety, or aesthetic and historic character of the project.

Operation and maintenance costs would be negligible. The visual character of the project site will not be significantly affected, because the licensee must maintain the minimum flow of 4 cfs over the crest of the dam, which is sufficient to maintain an attractive veil of water over the falls. Furthermore, the plunge pool would not be readily visible from the bridge where the falls are usually seen, and would not affect the veil of water passing over the dam's crest.

As discussed in the EA, the project dam was considered to be a contributing element to the Springfield Historic District (District). After consultation with the Vermont State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act, the SHPO recommended that the project dam, because of its contribution to the District, be documented prior to construction of any fish passage facility. The Corporation, by letter to the SHPO dated May 24, 1995, disputed the fact that the dam was a contributing element to the District and stated that the SHPO agreed to reevaluate its recommendation to require documentation. In order to allow the Corporation and the SHPO to attempt to resolve this matter, the Corporation will be provided additional time to consult with the SHPO. After the licensee has completed its consultation, the Commission will determine what, if any, mitigation measures may be appropriate.

The Commission concurs in the conclusions of the EA, for the reasons expressed in the EA, and accordingly, we will exercise our authority under Article 11 of the Corporation's license to amend the license to provide for the installation, operation, and maintenance of the downstream fish passage facilities proposed by the Corporation, with the facility to be operational by April 1, 1996. 13/

In connection with construction of the permanent passage facilities, the Corporation should consult with the resource agencies in developing functional design drawings to be filed for Commission approval. Further, the Corporation must provide final contract drawings and specifications for the pertinent features of the revised project to the Commission's New York Regional Office (NYRO) and the Director, Division of Dam Safety and

13/ In comments on the EA, the Corporation requests that we review the salmon restoration program in the year 2001 and allow for discontinuance of operation of the fish passage facility if the FWS has not met its goal of returning adult Atlantic salmon to the Connecticut River as stated in the FWS' 1989 EIS on salmon restoration. At any time, the licensee may file a request for Commission approval to stop operation of the downstream fish passage facility, after consultation with the appropriate resource agencies.

Inspections (Director), for review prior to start of construction. Furthermore, the Corporation must submit to the NYRO and to the Director copies of any approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval by the licensee of any contractor-designed cofferdams and deep excavations prior to the start of construction to ensure that construction of any cofferdams and deep excavations is consistent with the approved designs. Finally, the Corporation must submit "as built" drawings after the proposed installations are completed.

The Commission orders:

(A) The licensee's fish passage proposal filed on October 25, 1994, is approved.

(B) Within 30 days of issuance of this order, the licensee shall file for Commission approval, detailed functional design drawings of the downstream fish passage proposal approved herein, after consultation with the U.S. Fish and Wildlife Service and the Vermont Department of Fish and Wildlife. The Commission reserves the right to require changes to the facility's design.

(C) The licensee shall complete construction of the downstream fish passage facility by April 1, 1996.

(D) The downstream fish passage facility shall be operated annually from April 1 through June 15. Operation of the facility may be temporarily modified if required by operating emergencies beyond the control of the licensee and upon mutual agreement among the licensee, the Vermont Agency of Environmental Conservation, and the U.S. Fish and Wildlife Service.

(E) The licensee, at least 60 days prior to the start of construction, shall submit one copy to the Commission's New York Regional Director and two copies to the Director, Division of Dam Safety and Inspections, of the final contract drawings and specifications for the pertinent features of the project. The Director, Division of Dam Safety and Inspections, may require changes to the plans and specifications in order to assure a safe and adequate project.

(F) The licensee shall review and approve contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of the cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall submit to the Commission's New York Regional Director and to the Director, Division of Dam Safety and Inspections, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

(G) Within 90 days of completion of the modifications to the spillway and fishway, the licensee must file, for Commission approval, revised exhibit drawings to describe and show the modifications as built.

(H) The licensee shall consult with the Vermont State Historic Preservation Officer (SHPO) to reevaluate the SHPO's recommendation to require documentation of the Comtu Falls Dam. The licensee shall file, within 20 days from the date of this order, the results of the consultation and, if available, comments from the SHPO. If the licensee does not agree with the SHPO's final recommendations regarding documentation of the dam, it must provide the reasons for its disagreement. The Commission reserves the right to require the licensee to undertake the mitigative measures necessary to ensure protection of cultural resources, including documentation of the Comtu Falls Dam. The licensee shall not undertake any construction activity until notified by the Commission that construction can proceed.

(I) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

By the Commission.

(S E A L)

Lois D. Cashell,
Secretary.

VERMONT

Vermont Department of Environmental Conservation *Agency of Natural Resources*
Watershed Management Division
1 National Life Drive, Main 2 [phone] 802-828-1535
Montpelier, VT 05620-3522 [fax] 802-828-1544
http://www.vtwaterquality.org

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June 1, 2015

Mark Boumansour
Gravity Renewables Inc.
1401 Walnut Street, Suite 220
Boulder, Colorado 80302

RE: Comtu Falls Hydroelectric Project (FERC No. 7888)
Comments on Low Impact Certification

Dear Mr. Boumansour:

Thank you for this opportunity to comment on Gravity Renewables Inc.'s application to the Low Impact Hydropower Institute (LIHI) for certification of the Comtu Falls Hydroelectric Project as a low impact hydroelectric project.

The Comtu Falls Hydroelectric Project originally received a water quality certification from the Department of Water Resources and Environmental Engineering (now the Department of Environmental Conservation – herein the Department) in 1982. In 1983, the certification was amended to authorize the project to install an additional generator and turbine to operate at minimum flows. In 1989, a second certification amendment was issued to reflect the project would install a single generator with a higher producing capacity than originally proposed. Conformance with the conditions of the certification and amendment would assure that the project does not violate Vermont Water Quality Standards. At this time, the Department does not have any information suggesting that the project is not operating in compliance with the conditions in its water quality certification.

Fish passage has been a longstanding issue at the Comtu Falls project. Pursuant to Condition F of the Comtu Falls water quality certification, the project is required to provide downstream fish passage for Atlantic salmon for the Connecticut River restoration effort. The previous owner of the project, the Comtu Falls Corporation, historically operated the downstream fish passage only during the spring season. The fall is an important period of downstream movement for fish. Salmon "pre-smolts" typically initiate their downstream movements during the preceding fall. In 2005, the Vermont Department of Fish and Wildlife requested that Comtu Falls Corporation operate the fish passage during the fall period (September 15 – November 15) similar to other hydroelectric projects located both upstream and downstream. The Comtu Falls Corporation had declined this request.

The new owner of the Comtu Falls Corporation, Gravity Renewables, has engaged the Department in productive discussions regarding fish passage needs at the project and expressed a willingness to work in collaboration with the Agency of Natural Resources (Agency) to meet its management objectives. While federal support for Atlantic salmon restoration program has ended, salmon were stocked through 2013 and will require downstream passage to be provided through at least 2016. However, passage needs could persist longer depending upon state management decisions. In light of

the passage needs for Atlantic salmon, Gravity Renewables has committed to operating passage facilities in both the spring and fall, as necessary to support restoration efforts.

While the water quality certification issued for the Comtu Falls project focused on passage for Atlantic salmon, maintaining passage from April 1 through June 15 and from September 15 through November 15 each year will also benefit other riverine species. Resident salmonids have the propensity to actively migrate throughout the year for a multitude of purposes; be it for spawning and rearing in the spring, to seek overwintering habitat in the fall, or in search of cold water refugia in the summer. The Agency recognizes the value of maintaining connectivity as it allows fish to seek the best available habitat and food resources, avoid predator interactions, and promotes genetic diversity. The Vermont trout management plan, further underlines the importance of habitat connectivity by stating, "the ability of trout to migrate within their environment is at a minimum important to their survival, and at most, essential to it".[1] Additionally, the water quality management plan for the Ottauquechee and Black River basin recognizes the impacts associated with dams, and specifically cites blocking aquatic organism passage, as a stress on rivers and streams.[2] After discussions with the Agency, the applicant has agreed to operate fish passage for riverine species during both the spring and fall, if passage is no longer required for Atlantic salmon. This agreement supports the Agency's management objective, to provide a recreational trout fishery in this reach, and is consistent with statewide and basin specific comprehensive plans.

Given Gravity Renewables commitment to provide passage for both Atlantic salmon and resident species through both the spring and fall, the Department believes that the Comtu Falls hydroelectric project meets the intent of the LIHI's criteria for certification as a low impact project. If the project is certified by LIHI, any certification should include a condition that states "the applicant shall operate downstream fish passage facilities from April 1 through June 15 and from September 15 through November 15" to reflect the agreement reached between the Agency and the applicant.

Sincerely yours,

Jeff Crocker
River Ecologist

c: Rod Wentworth, VT DFW
Lael Will, VT DFW
Ken Cox, VT DFW
John Warner, USFWS
Melissa Grader, USFWS

[1] The Vermont Department of Fish and Wildlife. 1993. The Vermont Management Plan for Brook, Brown and Rainbow Trout. Waterbury, Vermont.
[2] The Vermont Agency of Natural Resources. 2012. Basin 10 Water Quality Management Plan. Montpelier, Vermont.

Gmail

Celeste Fay <celeste@gravityrenewables.com>

RE: Comtu Falls Hydro: LIHI Re-Certification Q

1 message

Davis, Eric <Eric.Davis@vermont.gov> Tue, Nov 10, 2020 at 10:56 AM
To: Jon Petrillo <jon@gravityrenewables.com>
Cc: Celeste Fay <celeste@gravityrenewables.com>

Hi Jon,

Apologies on my delayed response to this relatively simply inquiry.

Yes, the Department still views the current WQC as amended in January 1989 remains valid and in effect for the project at this time.

Thank you,

Eric

Due to the coronavirus (COVID-19) we are taking additional safety measures to protect our employees and the public and are now working remotely while focusing on keeping our services and business processes fully functional. Please communicate with our staff electronically or via phone to the greatest extent possible since our processing of postal mail may be slowed during this period.

Division staff contact information can be found online here:

https://dec.vermont.gov/watershed/contacts.

Thank you for your patience during this challenging time. We wish you and your family the best.

Eric Davis, *River Ecologist*

1 National Life Drive, Davis 3

Montpelier, VT 05620-3522

802-490-6180 / eric.davis@vermont.gov
http://www.watershedmanagement.vt.gov/rivers

See what we're up to on our Blog, Flow.

From: Jon Petrillo <jon@gravityrenewables.com>
Sent: Monday, October 19, 2020 2:37 PM
To: Davis, Eric <Eric.Davis@vermont.gov>
Cc: Celeste Fay <celeste@gravityrenewables.com>
Subject: Comtu Falls Hydro: LIHI Re-Certification Q

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Eric –

Hope this message finds you well.

We are in the process of recertifying our Comtu Falls Project (P-7888) on the Black R in Springfield, VT with LIHI.

They have asked if you could please confirm that the current WQC as amended in January 1989 remains valid and in effect for the project at this time.

I think a simple e-mail response would be sufficient. Always happy to chat if you'd like.

Peace.

Jon

Jonathan Petrillo | *Director of Regional Business Development*

Gravity Renewables Inc.

360 Thames St., Suite 4A Newport, Rhode Island 02840

Mobile: 203.623.4637 | Direct: 303.615.3099 | Fax: 720.420.9956

www.gravityrenewables.com

Connecticut River Coordinator's Office

Northeast Region

103 East Plumtree Road
Sunderland, MA
01375
(413) 548-9138

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Site Map

Atlantic Salmon Management

Photo of an Atlantic salmon held in human hands. Credit: USFWS

The Connecticut River stock of Atlantic salmon disappeared from the Connecticut River just after the turn of the 19th century. The loss was recognized by the public and there was a subsequent attempt to restore the population in the 1860s. The project was abandoned after a couple of decades. In 1967 the basin's natural resource management agencies tried again to restore salmon to the basin.

The second attempt to restore Atlantic salmon to the Connecticut River basin was supported by State and **Federal legislation**. This mandate created the Connecticut River Atlantic Salmon Commission. Member agencies agreed to work together and ceded authority for the management of salmon to this multi-agency, interstate Commission. The Commission guided a **cooperative salmon restoration effort** which includesd habitat protection, fisheries management, research, regulation, **hatchery production and stocking**.

The long-term efforts of this cooperative partnership resulted in an **annual return of adult Atlantic salmon** to a river from which the native interjurisdictional stock had been extirpated. The restoration efforts throughout the watershed helped local economies as observed on the Farmington River as well as social benefits for thousands of school children who have had the hands-on opportunity to **raise salmon in the classroom** and release their fish in the streams that flow through their communities.

Due to low adult returns and the science supporting salmon restoration, the U.S. Fish and Wildlife Service decided to discontinue culturing salmon for restoration in the Connecticut River Basin in 2012. The Service continues to monitor, assess, and research Atlantic Salmon and improve habitat for the species. The salmon in the classroom project will also continue.

Connecticut River Atlantic Salmon Commission
Turners Falls, Massachusetts
Meeting Minutes
July 10, 2012

Agenda Items:

1. Determination of Quorum, Approval of Today's Agenda & Minutes of the November 10, 2011 Meeting.

Chair Mr. Bill Hyatt called the meeting to order at 10:10 a.m. and adjourned at 12:15 p.m.

Mr. Hyatt opened the meeting, and the Commissioners introduce themselves followed by the general audience.

No changes to the agenda were made, and the minutes of the last CRASC meeting on November 10, 2011 were reviewed. A motion to accept the minutes from that meeting was made by Mr. Jones, seconded Mr. Palmer, all were in favor.

2. Report of the Executive Assistant

Mr. Sprankle provided a handout and reviewed his report, refer to attachment for details. Highlights of the report include a review of basin facility fishway and trap counts for 2012 to this date. It was noted that passage count totals for American shad were up dramatically compared to the recent years (500,900). Atlantic salmon facility counts were at low levels (50) documented, blueback herring counts at Holyoke remain very low, and sea lamprey counts at Holyoke were very low, although within the range of normal variation. It was noted that the 10,295 American shad counted on the Westfield River was a record, doubling 2011 (also a record year). He noted that Holyoke Fish Lift had the fifth highest shad passage count in its time series (490,431). It was noted that Vernon Dam ladder, following study telemetry by Conte Lab with funding from TransCanada and inspections work by Conte and USFWS staff, resulted in ladder fixes prior to 2012 season. Over 10,000 shad have passed this year compared with 46 in 2011.

Mr. Sprankle continued with updates on regional fish passage updates from the Northeast which generally indicate continued low counts for many anadromous fish species where monitoring is in place. United States Atlantic salmon return numbers were reviewed also and were also substantially reduced from 2011 numbers at this time. A summary of fish count data for select species was reviewed in figures with river discharge, turbidity and water temperature figures also reviewed for 2011 and 2012. The spring of 2012 was noted as having extremely low flows in early spring and greatly elevated temperatures, before "normalizing' for the month of May.

Mr. Sprankle reviewed the American shad Movement and Survival study (year 2) undertaken by USGS Conte Lab (Dr. Castro-Santos) and his office, begun in 2011 with funding support in year 2 (National Fish and Wildlife Foundation Grant, USFWS Grant, TransCanada, FirstLight Power) and in partnership with Holyoke Gas and Electric as well. A total of 16 receivers were set up downstream of Turners Falls Dam, 5 new sites between Holyoke and TF. The TF Canal System had the standard extensive telemetry array. Another 9 receivers were set up from TF to Vernon Dam, with 3 new sites. All dam's fishways had PIT antennas in place. In the lower river a total of 89 fish were radio/PIT tagged (double tagged) and another 56 PIT only tagged. At Holyoke, 76 shad were double tagged and another 53 PIT only tagged. At Cabot Ladder exit, 120 shad

were double tagged with another 120 PIT only tagged. No results are available at this time. Data collection is going very well and will run through early August.

Shad transfers occurred in May and early June at HFL. CTDEEP, NHFG, and RIDFW all obtained shad for restoration programs in and out-of basin. Data are still not final on numbers. Conte Lab also obtained fish for paired releases (tagging study) at Cabot.

The relatively large shad run was not expected and other systems remain at low levels of abundance. The juvenile index survey from CTDEEP did not indicate and large year-classes having been produced 3- 6 years prior.

Mr. Hyatt asked if there was a motion to accept the report, which was made by Mr. Palmer, seconded, and all were in favor.

3. Report of the Technical Committee Chair and Subcommittee Reports

Dr. Slater provided a handout report that provided a summary of the June 26, 2012 Technical Committee meeting. The report provides updates for each agenda item and will be summarized here. **The report provided in the meeting packets contain detailed information summarized below and in some cases inserted below.**

Assignments for Chairs of the nine updated Subcommittees were reviewed. These groups will start meeting soon to address a diversity of diadromous species and habitat concerns.

Table 1. CRASC Tech Subcommittees and chairs (as of June 26, 2012).

CRASC Tech Subcommittee	Chair and Vice Chair	Agency
Salmon	Steve Gephard & Vice Lenny Gerardi	CTDEEP & VTDFW
Shad	Ken Sprankle	USFWS
River Herring	Steve Gephard	CTDEEP
Sturgeon	Micah Kieffer	USGS
American Eel	Tim Wildman	CTDEEP
Sea Lamprey	Melissa Grader	USFWS
Fish Culture	Dan Marchant	MADFW
Fish Passage	John Warner	USFWS
Habitat	Steve Gephard & Vice Matt Carpenter	CTDEEP & NHFG

Salmon Subcommittee

There was a discussion about the radio tracking of tagged salmon released at Holyoke given Jay McMenemy's retirement as he used to coordinate the tracking of these fish. Mr. Cox stated that monitoring will be reduced from the past but Melissa Belcher will be conducting some tracking. The upper main stem ladders will identify passage of these fish by digital monitoring.

Mr. Gephard gave a report on the 2012 U.S. Atlantic Salmon Assessment Committee Meeting.

which was held at the Conte Lab in Turners Falls, March 5 – 8. This working meeting is held each year to produce a report that summarizes activities undertaken the previous year in the U.S. relative to Atlantic salmon restoration and recovery. It covers descriptions of adult returns, fisheries, stock assessments, program summaries (e.g. the Connecticut program, the Merrimack program, etc.), fish health updates, etc. Report No. 24 covering 2011 activities is now posted on a NOAA website: www.nefsc.noaa.gov/USASAC/. It is 185 pages long with 39 tables and figures and 20 appendices. It is not appropriate to summarize its contents now since it focuses on 2011 returns and our focus has already shifted to the 2012 returns. However, this is a valuable reference document that can provide long-term information on Atlantic salmon in New England. The 2012 Report will be generated at the March 2013 meeting, expected to take place in Old Lyme, CT.

Fish Culture Subcommittee

Mr. Dan Marchant provided a handout on fish culture activities. Highlights of the report include the best current data on fry stocked in the basin this spring which was a total of 2.2 million fry, which came from 4.94 million eggs taken in fall 2011.

RCNSS
Stocked approximately 82,000 feeding fry.

DDENFH
Released 82,400 smolts this spring and 11,900 parr last fall.
For 2013 release there are over 95,000 salmon, some of which will be available for fall release.

BNTH
Released 4,200 parr last fall and 3,800 smolts this spring.
For 2013 release there are approximately 9,000 salmon.

KSFH
Released 416,600 fry during spring distribution. Survival from egg to fry was again less than historic average. An investigation to improve survival through the eyed egg stage is ongoing. As part of this process, pipelines have been disinfected and a treatment regime is planned to improve egg eye-up.
Brood fish on site are expected to produce 2.5 to 3.0 million eggs in fall 2012.

RRSH
Released approximately 1.57 million fry basin-wide. These fry originated from eggs produced at RRSH and WRNFH.
Brood fish on site are expected to produce 1.5 million eggs in 2012.

RXFCS
Released approximately 162,000 fry to VT waters. These fish originated from eggs provided by Kensington SFH.
The facility is in the process of engineering for re-building after the damage from flooding 2011. The outdoor rearing area will be re-built. The indoor rearing and incubation area is intact and capable of supporting egg incubation in the fall, provided construction activities don't interfere.

WRNFH
WRNFH staff transported fry from RXFCS and RRSH to VT waters.

Mr. Novak reported that Cronin National Salmon Station has 40 adult returns on station, all of which are multi-sea winter fish. There have been no grilse captured or observed. Only one of the adult fish has an

adipose clip (smolt origin)

Fish Passage Subcommittee

Mr. John Warner provided a handout and described two meetings held by the CRASC affiliated Fish and Wildlife agencies last winter to address the pending relicensing of five large CT river hydroelectric projects (Turners Falls Dam, Northfield Mtn Pump Storage, Vernon dam, Bellows Falls Dam, and Wilder Dam). The meetings were centered on 1) fish passage (up and downstream issues), 2) fish population impacts (e.g., shortnose sturgeon), and 3) environmental conditions (spill flows, operational flows, bypassed river reaches). This fall the Preliminary Application Documents will be due and time lines for actions by FERC will begin as the relicensing process takes five and a half years.

Dr. Brett Towler was asked to review preseason fishway inspections which were instituted following an agency meeting last fall where concerns about fishway operations relative to design plans and agreed-to modifications were discussed. Holyoke, Turners Falls and Vernon Dam were inspected using a new systematic form created with input from Dr. Alex Haro and others. Serious issues at Vernon Dam were identified and promptly addressed by Trans Canada. As noted earlier, shad passed at Vernon in 2011 totaled 46 and is over 10,000 this year. In season monitoring has continued and brought emerging issues quickly to light. In all cases necessary fixes were quickly made by either TransCanada or First Light Power.

Mr. Len Gerardi asked if we could include a requirement for this type of monitoring in the new FERC licenses discussed earlier. Mr. Warner stated yes. It will be important to ensure these elements are included in those discussions.

Holyoke – Connecticut River

- Consulting parties (FWS, NOAA, MDFW, TU, CRWC) have agreed on the new design for the downstream passage system at Hadley Falls Station
- HG&E proceeding with construction drawings
- We will need to review construction schedule and implications for operating upstream fish passage facilities during construction

Turners Falls – Connecticut River

- 2012 Gatehouse shad passage evaluations by Conte Lab - Haro/Castros-Santos – ongoing

Vernon – Connecticut River

- Ladder problems noted last year were corrected – reports suggest generally good operating conditions
- Ongoing shad migration study could shed light on overall passage success

Connecticut River Relicensings (Turners Falls Northfield Mountain, Vernon, Bellows Falls and Wilder projects – Licenses expire in 2018)

- Preliminary Application Document (PAD) for each project will be prepared and distributed in October 2013.
- Public meetings to follow PAD - opportunity to raise issues/ identify study needs.
- Potential for meetings with owners prior to PAD but not required.
- Preliminary data collection on mussels, flows, river temperatures etc ongoing.

Fifteen Mile Falls – Connecticut River

- Moore dam sampler operated without flow inducers in 2012.
- Captured smolts were transported below Vernon Dam rather than below McIndoes. As of June 18, 1,375 were captured (approx same as 2011)

Gilman Dam – Connecticut River

- Guidance screen and new bypass completed and operated

Fiske Mill - Ashuelot R.

- Fish lift operational in mid-May after glitches worked out but high river flows and no tailrace barrier may have affected passage numbers
- 2 sea lampreys, and a number of trout, suckers and smallmouth bass lifted. One large salmonid lifted
- Tailrace barrier to be installed for 2013

New Hydro Proposals at Corps Dams – West, Black and Westfield Rivers

- Licenses issued for Ball Mtn and Townshend dams
- FERC will not require specific downstream passage and entrainment measures since Corps has final say on anything built at their dams.
- Start of construction uncertain

Mr. Gephard gave updates on non-FERC jurisdiction projects in CT which included plans to build a fishway on the dam at Rogers Lake (a lower main stem trib), the Eightmile River, the Ed Bills Pond Dam removal, Mattabasett River fishway (will open 60 miles of habitat), and movement on getting a design for a replacement of the Rainbow Dam fish ladder, in addition the breached Spoonville Dam which is believed to present a fish passage barrier will be fully removed.

Shad Subcommittee

Mr. Sprankle provided a handout

River Herring

Mr. Gephard started by noting that NOAA is holding three meetings on river herring associated with their review of the potential listing of these species under the ESA. He attended the first meeting which focused on stock structure; the others will cover risk of extinction and potential impacts of climate change. There has been progress made with the NE Fish Mangt Council and Mid Atlantic Fish Mngt Council on the monitoring of bycatch which may impact river herring and shad. The bycatch may occur in the Atlantic Herring fishery and other small mesh mid-water trawl fisheries (squid, butterfish). Data is lacking.

4. Salmon Update

- Genetic Marking Study – Jason Coombs stated Dr. Letcher was unable to attend the meeting and he could only report that they did not have any results ready for this meeting. He further stated they are close to being able to provide results and those should be available in one month
- NASCO update – Mr. Gephard provided a handout. He noted his attendance at the June NASCO meeting and the fact that the expired Greenland catch agreement was reset without any issues. Greenland will not be exporting any catch. Other agreements were also made for smaller fisheries
    - Karl Meyer asked if climate change was discussed. Mr. Gephard noted not at this meeting but at the SALSEA meeting he attended in the fall and he commented that shifts in prey and predators have been observed in a northward direction.
- USFWS – Ms. Weber stated that USFWS values the partnership of the CRASC and its role in restoring migratory fishes and habitat in the basin. She noted USFWS believes this Commission is important to achieving these goals but noted that the salmon program has been performing very poorly for over two decades in terms of adult returns (tied to greatly reduced marine survival rates since 1992) which coupled with fiscal challenges and shifting priorities, such as the ESA Maine Salmon, make it necessary for USFWS to

no longer produce any salmon in culture facilities for this restoration program. This change means White River National Fish Hatchery and Dwight D Eisenhower (following 2013 smolt stock out) will no longer culture salmon for the CT River Program. The Service will monitor other salmon rivers and if any significant improvements are observed in remaining U.S. rivers that can be raised for discussion.

- Mr. Hyatt asked what this meant for Cronin Station
- Ms. Weber stated Service will be considering its options for Cronin

- Mr. Hyatt stated that CT will keep Kensington State Fish Hatchery in operation and its primary purpose will be to raise broodstock Atlantic salmon which have become popular fisheries in designated rivers outside of CT basin. As a by-product of this program, eggs can be obtained, producing ~400,000 per year which they would stock into target habitat reaches. This would also serve as a potential genetic bank, keeping the strain we have in hand alive. It is unclear if this design would be able to maintain a genetically viable strain, as intended, and that will need to be examined more closely. With this move and USFWS position, he recommended tasking the Tech with how to move forward, address genetic questions, and where to stock, what are the options and best information on this. He also noted an intention to continue to provide salmon eggs for class room programs.
  - Mr. Palmer commented VT would be interested in staying involved in a stream stocking program. He stated VT could receive eggs for incubation (several hundred thousand) and stock them as fry but would not maintain any broodfish. He believes there is value to having salmon present in the state's streams even if the possibility of restoration (self-sustaining) is not likely.
  - Mr. MacCallum stated we have a Strategic Plan that we have not fully implemented, calls for 10 million fry to be stocked out, we have been stocking ~6M in recent years. This past year it was ~2M. USFWS has stated that they will no longer culture fish and that results in a production loss of ~60% -70% of fry and the smolts – we must have the Tech Committee respond back to us on what this means relative to the Strategic Plan. He noted we are not here to operate a broodstock fishery program. What are the resources left to work with? The status of Cronin is unclear. Staff support is unclear. We must understand what the resources are and what logical options are.
  - Mr. Hyatt concurred and asked what kind of timing for Tech feedback on this charge?
  - Mr. MacCallum stated early October
  - Ms. Weber asked Mr. MacCallum to clarify his charge.
  - Mr. MacCallum stated an example would be - do we focus on the Farmington River, when fish come back what do we do with them, he needs to have this information to bring before his Fish and Wildlife Board and for CRASC to determine best course forward
  - Mr. Hyatt agreed, and stated **there were three charges to the Tech Committee: 1) given the remaining resources of the Program, what are the best options to continue forward (based on existing Strategic Plan), 2) what are the likely outcomes of those options, and 3) what are implications to maintaining desired genetic diversity, existing strain, characteristics, under these options. Fourth added below:**
  - Mr. Palmer noted that the Strategic Plan was more specifically designed to address implementation of the Restoration Program and has goals such as stock 10 million fry, etc., and does not go into specifics on adult return number goals. He stated that the over-arching goal of restoring a self-sustaining, is that realistic, given what we have seen to date and limitations we now face? We can revisit

that goal after the Tech reports back in October.

- Ms. Weber stated we should revisit expectations based upon existing levels of resources and known performance.
- Dr. Slater stated we will need to discuss if restoration is possible under a "new" (reduced program) scenario.
- Ms. Weber commented was it ever possible even before this point.
- Mr. Archambault stated Service can have Northeast Fisheries Center, population dynamics staff run models on adult returns given reduced stocking and other scenarios – work that has been developed already and reported on in past.
- Dr. Slater stated that would be helpful to the Tech. and we will use all available resources to address the charges of the CRASC when meeting.
- Mr. MacCallum restated that he would like to have the CRASC next meet in first two weeks of October, or earlier and it was agreed that the Tech could have the necessary report ready by that time window.
- Mr. Hyatt directed Dr. Slater to have the Tech report back on those charges and noted that NOAA Fisheries scientists had provided a letter supporting any plans to keep the existing population (southern most extent) in existence (e.g., respect to climate change and region-wide salmon management).
- Mr. Jones commented that there are two main stem fishways (Bellows Falls and Wilder Dam) that were initially, principally designed/intended for salmon passage. It is important that we also think about the implications of program changes for these facilities and their operations.
- Mr. Hyatt noted that this is also an important question that must be considered.
- Mr. Jones stated what do we tell these owner/operators?
- Mr. Hyatt stated that **this will also be charged to the Tech for them to address Charge #4 – What are recommendations for upper main stem and fishways (up/down) bypasses and salmon program**.
- Mr. Palmer noted that any modeling exercise as we have seen in the past will provide results we can reasonable expect – given continued low marine survival rates. Given the continued low marine survival rates, we were not going to achieve a self-sustaining population.
- Mr. Hyatt stated we still have year classes in the basin and out at sea and things may change.
- Mr. Meyer asked is what CTDEEP proposing for their facility a put-and-take fishery?
- Mr. Hyatt stated that this transition period and KSFH's role is driven by CTDEEP anglers which value the broodstock fishery. It's extremely popular and their maybe other changes at that facility to increase trout production.
- Mr. Meyer questioned "is this no longer a restoration program?"
- Mr. Hyatt answered we have to see what our options are from the Technical Committee.
- Mr. Hyatt continued on the topic of Salmon in the Schools and stated CTDEEP will be able to support it for the next two years wherever it currently exists.
- Ms. Weber stated the USFWS supports classroom work with children too.
- Mr. Jim Carroll stated it is important to have this discussion as there are new schools interested in this program, we must be able to explain the future outlook, and this information is helpful.
- Mr. Gephard stated there should be no new schools added, effectively capping numbers.

- Mr. Archambault stated that there could also be a shift to brook trout in the class

room instead.

5. Discussion of CRASC Mission

Mr. Andy French was introduced to talk about the DOI Blueways Initiative. He provided a handout that included the legislative mandates of the Conte Refuge and potential benefits of the Blueways initiative. He described the criteria development and the fact the Blueways is designed to improve federal agency cooperation to address recreation, educational and conservation concerns. The CT River is one of only a few pilot areas. He further continued that the Conte Refuge has a Friends Group that has been extremely successful in competing for national competitive funds for many projects. This group's new Stewardship Committee is intended to partially address conservation issues, and he stated, that the CRASC's interests should be the Conte Refuge's interests relative to aquatic resources and habitats. Mr. French noted that Mr. Sprankle was directed at Tech Meeting to represent CRASC on this Committee which he agreed to. Mr. Sprankle asked the Commissioners to verbally concur with his representation of CRASC on that Committee which they did.

Mr. Hyatt stated prior to CRASC (1983) shad, river herring were very important species, these and others will be increasing in CRASC's mission, many new subcommittees as noted earlier.

Mr. Meyer asked if any states move out of the program would we consider changing the name of the Commission?

Mr. Hyatt stated no, not at this time.

Mr. Meyer noted that this will likely present some confusion to the public over time.

6. Development of Standardized Fish Metrics for 401 Water Quality Certification

Mr. Andy Fisk was introduced and described how CRASC and CRWC have similar goals and have and will continue to work collaboratively on these. He noted that he had presented this same information at the January Tech were the Tech endorsed his premise and he was asked to come before the Commission. Mr. Fisk's goal is to work on developing a consistent standards in biological criteria for using the State's DEP and Fisheries agency staff. He noted some states are making progress with these two branches working together but can be improved. He noted Clean Water Act is power tool, using biological criteria (alga, bugs, fish) that can be placed in model to change current slide into weakening and degradation of water quality under current government approach. He would like to use existing data from the EPA survey, state agency staff, and a consultant to develop criteria, this will require staff meeting time, which the consultant would use to develop a model and the CRWC could then handle the public involvement which is an important component. He would like to create a biological condition gradient (like an IBI), uses range of conditions. We can then work towards having target fish communities. With upcoming relicensing of 5 mainstem hydro power projects this would be a helpful tool. He would like to use the Tech Committee in that process – limited time commitment – meeting or two – develop consistent standards to help prevent erosion of water quality standards.

7. Vermont Yankee, expired permits and CRASC letter

Mr. Sprankle directed Commissioners to a letter written by him as a Service Biologist to address a charge by the VT Agency of Natural Resources to the Committee (VY Advisory) he serves on regarding the operation of that power station (with other state and federal biologists), operated by

the State of Vermont. The charge was to address the NPDES 316 A permit which specifically addresses the discharge of heated water by the plant (not the intake which are the issues of organism impingement and entrainment). The letter was written using available published research, USFWS independently gather temperature monitoring data, and recent research findings from the shad movement study covered earlier. The letter points to serious concerns and questions regarding potential impacts to the restoration goals for Atlantic salmon, American shad, blueback herring and also federally endangered shortnose sturgeon. The year-round release of heated water coincides with critical periods for migratory fish which are known to be delayed in and around dams/fishways, both for upstream and downstream movements. The VY plant discharges heated water immediately upstream of Vernon Dam – impacts to CRASC priority fish species have not been adequately studied and thus the letter states as the EPA guidance directs cumulative effects must be considered. Simply stated, there are important biologically based concerns (as outlined and supported in the letter in detail) related to VY's thermal discharge that strongly suggests potential negative effects occurring on restoration species (adults and juveniles) for most if not the entire year.

As a further example, American shad passage numbers have improved in 2012 at Vernon Dam, this does not change the fact that these fish are spending extended periods of time in river water artificially heated by a VY water discharge. Due to compliance being determined further downstream (0.4 miles below dam) using a model, and the thermal discharge/mixing still occurring in the dam's forebay and tailrace of Vernon Dam, the habitats adjacent and downstream of the discharge and in the tailrace are subject to more extreme temperature variations (higher values occur more frequently in greater magnitude). At this life-stage and time frame, fish are on the verge of spawning due to river temps being in the upper 60s to low 70sF and energy expenditures following costs associated with passing three fishways to reach the base of Vernon Dam (river mile 141) have already required significant physiological costs. This situation can logically be reasoned to cause a reduction in shad passing upstream of Vernon Dam – directly due to exposure to heated water – it is basic fish biology, physiology, published in the literature and logically reasoned to impact restoration goals relative to adult shad numbers above this dam. Please refer to the letter for more details.

- Mr. MacCallum noted he viewed the letter as well done and since it came from the Coordinator that should imply CRASC endorsement, given states help fund his office.
- Some discussion followed that the letter was written as a technical review of important concerns raised by the USFWS – does not reflect any other agency/organization endorsement.
- Mr. Hyatt asked the Commission do we want to endorse this letter?
- All Commissioners stated they support a letter which reiterates the Service's concerns' as the Commission's concerns.
- Mr. Hyatt put the matter to a vote following a motion and seconding, all were in favor with one recusal (Mr. Eric Palmer).
- Mr. Hyatt stated a draft letter will be drafted and circulated among the Commissioners before final signature under his name.
- Mr. Palmer requested that the draft letter circulation not go to VTDFW (his Director or himself)

- There was a motion, seconded to adjourn, all were in favor.

Meeting adjourned at 12:24 p.m.

ATTENDANCE

Name	Affiliation
Bill Hyatt	CTDEEP/BNR
Wayne MacCallum	MA/DFW
Stephen Gephard	CTDEEP/Inland Fisheries
Ken Sprankle	USFWS/CTRC
Mark Tisa	MA/DFW
Eric Palmer	VTFW
Peter Basta	VT Public Sector
Robert A. Jones	CT Public Sector
Joe McKeon	USFWS
Len Gerardi	VTFW
David Detmold	Montague Reporter
Karl Meyer	Journalist
Melissa Grader	USFWS
Caleb Slater	MADFW
Glenn Normandeau	NHFGD
Wendi Weber	USFW
Bill Archambault	USFWS
Catherine Hibbard	USFWS
Bob Stira	FLPR/GDF SUEZ
Jim Carroll	CRSA
Dick Bell	CRSA
Andy French	Conte NFWR
Andrew Fisk	CRWC
Elizabeth Kendall	Capitol Region Education Council
Dan McKinley	USFS
Steve Roy	USFS
Jason Coombs	USFS
Bill Ardren	USFWS
Darren Desmarais	USFWS
Darleen Cutting	USFWS

Brittany Hinz <brittany@gravityrenewables.com>

Comtu Falls: LIHI Follow-Up

Jon Petrillo <jon@gravityrenewables.com> Wed, Jun 10, 2015 at 1:42 PM
To: "Grader, Melissa" <melissa_grader@fws.gov>
Cc: Brittany Hinz <brittany@gravityrenewables.com>, Eric Davis <Eric.Davis@state.vt.us>, "Crocker, Jeff" <Jeff.Crocker@state.vt.us>

Hi Melissa,

Following up on my VM. We appreciate the feedback and information on eel management activities. As it turns out LIHI is not quite ready to implement the PLUS criteria in their process so we will not be able to request the additional certification term. Considering this there would not appear to be an overlap in a standard LIHI term and the timeframes you suggest for potential eel management actions at Comtu Falls. However, when downstream barriers are removed Gravity will work collaboratively with the resource agencies to understand and support management goals.

In light of the above, can you please provide an updated response addressing the Service's position on the project's compliance with existing regulatory requirements that we can include in our LIHI application?

Happy to discuss more with you at your convenience.

Many thanks,

Jon

From: Grader, Melissa [mailto:melissa_grader@fws.gov]
Sent: Friday, June 05, 2015 10:45 AM
To: Jon Petrillo
Cc: Brittany Hinz; Eric Davis; Crocker, Jeff
Subject: Re: FW: Comtu Falls: LIHI Follow-Up

Hi Jon,

Looking through the email chain and letter from ANR, I think the Service is fine with that particular issue (operating the d/s bypass in spring and fall for riverine species). However, if Gravity will be seeking PLUS certification, the extended timeframe for certification raises the issue of eel passage. As you probably know, TransCanada's CT River mainstem projects (Vernon, Bellows Falls and Wilder) are undergoing relicensing. We anticipate that eel passage will be a requirement of any new licenses issued for those projects.

As the Black River enters the CT River upstream of the Bellows Falls Project, and there is only one other obstruction between BF and Comtu Falls, it is likely that the agencies will be seeking eel passage at Black River projects within the next 5 to 10 years. Therefore, in order for FWS to support extended "PLUS" LIHI certification, we would want assurances that Gravity will agree to implement eel passage measures when requested by the agencies. Given that you will be operating the bypass in the fall anyway for riverine species, any requests likely will focus on upstream passage measures.

We'd be more than happy to discuss this issue further with you if needed.

Regards,

Melissa Grader

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service - New England Field Office

103 East Plumtree Road

Sunderland, MA 01375

413-548-8002 x124

melissa_grader@fws.gov

On Wed, Jun 3, 2015 at 12:40 PM, Jon Petrillo <jon@gravityrenewables.com> wrote:

> Hi Melissa,
>
> As a follow up to our conversation I am forwarding along the correspondence and comment letter from the VT ANR on our application for LIHI certification for the Comtu Falls project on the Black R., in Springfield, VT (P-7888).
>
> We will be re-submitting our application to LIHI next week and will include the response from VT and what you put together from the Service as part of the package. As we discussed, e-mail is fine.
>
> Give me a call if you have any questions.
>
> Thanks in advance,
>
> Jon

Jonathan Petrillo | *Director of Regional Business Development*

Gravity Renewables Inc.

360 Thames St., Suite 4A Newport, Rhode Island 02840

Mobile: 203.623.4637 | Direct: 303.615.3099 | Fax: 720.420.9956

www.gravityrenewables.com

From: Davis, Eric [mailto:Eric.Davis@state.vt.us]
Sent: Saturday, May 30, 2015 3:50 PM
To: 'Jon Petrillo'; 'Mark Boumansour'; 'Jonathan Miller'; 'Brittany Hinz'
Cc: Crocker, Jeff
Subject: RE: Comtu Falls: LIHI Follow-Up

> Hi Jon,
>
> Great.
>
> I don't think the Agency needs any more information to finalize the comments. I think this should do it.

Brittany Hinz <brittany@gravityrenewables.com>

Comtu Falls 401 Compliance Letter

Brittany Hinz <brittany@gravityrenewables.com> Wed, May 27, 2015 at 10:51 AM
To: Jon Petrillo <jon@gravityrenewables.com>
Cc: "Grader, Melissa" <melissa_grader@fws.gov>, Jonathan Miller <jonathan@gravityrenewables.com>

Hi Melissa,

I know you are very busy right now, so I just wanted to check in with you quickly about this letter. We have the letter from VT DEC and wanted to see if the DEC letter covers the FWS as well, or if you are working on an independent letter.

Please let us know if we can be any help at all!

Thank you,
Brittany

Brittany Hinz | *Business Development Associate*
Gravity Renewables Inc.
1401 Walnut Street, Suite 220, Boulder, Colorado 80302
Office: 303.615.3104 | Mobile: 608.556.1814 | Fax: 720.420.9956
www.gravityrenewables.com

On Mon, Feb 23, 2015 at 7:42 AM, Jon Petrillo <jon@gravityrenewables.com> wrote:

> Thanks for the heads up Melissa.
>
> Let us know if there's anything we can do to make your review easier.
>
> Jon
>
> **Jonathan Petrillo** | *Director of Regional Business Development*
>
> **Gravity Renewables Inc.**
>
> 360 Thames St., Suite 4A Newport, Rhode Island 02840

Mobile: 203.623.4637 | Direct: 303.615.3099 | Fax: 720.420.9956

www.gravityrenewables.com

From: Grader, Melissa [mailto:melissa_grader@fws.gov]
Sent: Monday, February 23, 2015 9:26 AM
To: Brittany Hinz
Cc: Jonathan Miller; Jon Petrillo
Subject: Re: Comtu Falls 401 Compliance Letter

I am flat out through the 3rd week of March but will do my best to get you a response before April 1st.

Regards,

Melissa

Melissa Grader

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service - New England Field Office

103 East Plumtree Road

Sunderland, MA 01375

413-548-8002 x124

melissa_grader@fws.gov

~~~~~~

"Heaven is under our feet as well as over our heads" Henry David Thoreau

On Fri, Feb 20, 2015 at 5:28 PM, Brittany Hinz <brittany@gravityrenewables.com> wrote:

> Hi Melissa,
>
> We spoke last week about our Comtu Falls Hydroelectric Project in Springfield, VT and getting a letter of verification from the USFWS that we are in compliance with our 401 for our LIHI certification.
>
> This is required for our application, which are are submitting April 1st 2015. Can you please provide a timeline for when to except this?
~~~~~~

Thank you!
Brittany

Brittany Hinz | *Business Development Associate*

Gravity Renewables Inc.

1401 Walnut Street, Suite 220, Boulder, Colorado 80302

Office: 303.615.3104 | Mobile: 608.556.1814 | Fax: 720.420.9956

www.gravityrenewables.com

Attachment B

B.4 Contacts Forms

All applications for LIHI Certification must include complete contact information.

A. Applicant-related contacts

Facility Owner:	
Name and Title	Mark Boumansour, Manager
Company	Comtu Falls Corporation c/o Gravity Renewables, Inc.
Phone	303-440-3378
Email Address	mark@gravityrenewables.com
Mailing Address	PO Box 7580 Boulder, CO 80306
Facility Operator (if different from Owner):	
Name and Title	Same
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	N/A
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Celeste N. Fay, Regulatory Manager
Company	Gravity Renewables, Inc.
Phone	413-262-9466
Email Address	celeste@gravityrenewables.com
Mailing Address	PO Box 7580 Boulder, CO 80306
Party responsible for accounts payable:	
Name and Title	Megan Oaks, Accounting Manager
Company	Gravity Renewables
Phone	303-440-3380
Email Address	megan@gravityrenewables.com
Mailing Address	PO Box 7580 Boulder, CO 80306

B. Current and relevant state, federal, and tribal resource agency contacts with knowledge of the facility (copy and repeat the following table as needed).

Agency Contact (Check areas of responsibility: Flows__, Water Quality _X_, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	Vermont Department of Environmental Conservation
Name and Title	Jeff Crocker, Supervising River Ecologist
Phone	802-490-6151
Email address	Jeff.Crocker@vermont.gov
Mailing Address	1 National Life Drive, Davis 3, Montpelier, VT 05620-3522
Agency Contact (Check areas of responsibility: Flows_X_, Water Quality X__, Fish/Wildlife Resources _X_, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	USFWS
Name and Title	Melissa Grader, Fish and Wildlife Biologist
Phone	413-548-8002 X124
Email address	Melissa_Grader@fws.gov
Mailing Address	
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	VTANR
Name and Title	Eric Davis, River Ecologist
Phone	802-490-6180
Email address	Eric.Davis@vermont.gov
Mailing Address	Davis 3, 1 National Life Dr | Montpelier, VT 05620-3522
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	
Agency Contact (Check areas of responsibility: Flows__, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

C. Current stakeholder contacts that are actively engaged with the facility (copy and repeat the following table as needed).

None

Attachment C

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: July 15, 2020
Consultation Code: 05E1NE00-2020-SLI-3298
Event Code: 05E1NE00-2020-E-10017
Project Name: Comtu Hydroelectric Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2020-SLI-3298

Event Code: 05E1NE00-2020-E-10017

Project Name: Comtu Hydroelectric Project

Project Type: POWER GENERATION

Project Description: Recertification with Low Impact Hydropower Institute (LIHI) as a low impact hydropower project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.29908608162721N72.48267083072064W

Counties: Windsor, VT

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Northeastern Bulrush *Scirpus ancistrochaetus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6715	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.